a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JANUARY 1960

GAUGES IN DRAPER LOOM MAINTENANCE
Why and how loom gauges should be used in the mill
Article I starts on page 69

Fiber reactive dyes in printing
page 74

Modern wool mills need modern supervisors
page 86

Textile research achievements in 1959
page 92

DON'T ACT UNTIL YOU SEE USTER *matic*!

Textile industry leaders who have seen USTER*matic* could not believe their eyes.

They saw USTER*matic* tie 650 knots per minute on a flat-sheet 63" warp. They witnessed USTER*matic* cut warp tying time *in half* . . . . on every known material. Multicolored warps from a lease with maximum count variations are tied perfectly at high speed.

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NORTH
CAROLINA

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DIEHL* power transmitters drive new-type shuttleless loom

The spectacularly new, compact, low silhouette shuttleless looms, recently introduced by Draper Corporation, Hopedale, Massachusetts, are shown on the line at Pepperell Lindale. Among the advantages claimed for the new design looms are . . . increased production speeds . . . economy . . . easier operation by weaver and fixer . . . and a considerable reduction in noise level.

To drive this new loom with maximum efficiency and utmost reliability, DRAPER selected the DIEHL Power Transmitter . . . an inverted-type high inertia motor combined with a fast, positive, clutch-brake mechanism. The motor provides "stored energy" for smooth, fast starts and positive picking . . . maximum inertia with minimum size. The clutch-brake assembly is removable as a unit for maintenance, without disconnecting the motor from the loom frame, and features a clutch-actuating bearing mounting which assures full self-alignment of bearing for maximum life.

DIEHL Textile Motors and Power Transmitters can increase production and efficiency—at lower operating costs and less downtime—in your mill. Specify them for your textile machinery.

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VIB

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DRAPER CORPORATION

° *Patents Pending*

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When complex silicates of calcium and magnesium formed scale on equipment and left resistant residues in the cloth, a Becco Sales Engineer studied the situation, and recommended Silicate-Free Hydrogen Peroxide bleaching solutions which eliminated the problem.

Silicate-Free bleaching won't answer **every** textile bleaching problem. But chances are one Becco process or another **will.** If you need help, use the coupon below to request a Sales Engineer's call. Also, ask for your free copy of Bulletin No. 71, "Continuous Bleaching of Cottons with Silicate-Free Peroxide Solutions".

*U.S. Patents 2,740,689 and 2,820,690

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No. 52 – Bleaching with Some Peroxygen Chemicals.

No. 53 – Fluorescent Agents in Peroxide Bleaching of Knit Goods.

No. 60 – Successful Bleaching of Types 670 and 200 Nylon With Peracetic Acid.

No. 61 – Knit Goods Bleaching Range.

No. 71 – Continuous Bleaching of Cottons with Silicate-Free Peroxide Solutions.

No. 75 – Oxidation of Dyes On Cottons and Synthetics with Peroxygen Chemicals.

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Textile Industries

Formerly "COTTON"

JANUARY 1960 VOL. 124, NO. 1

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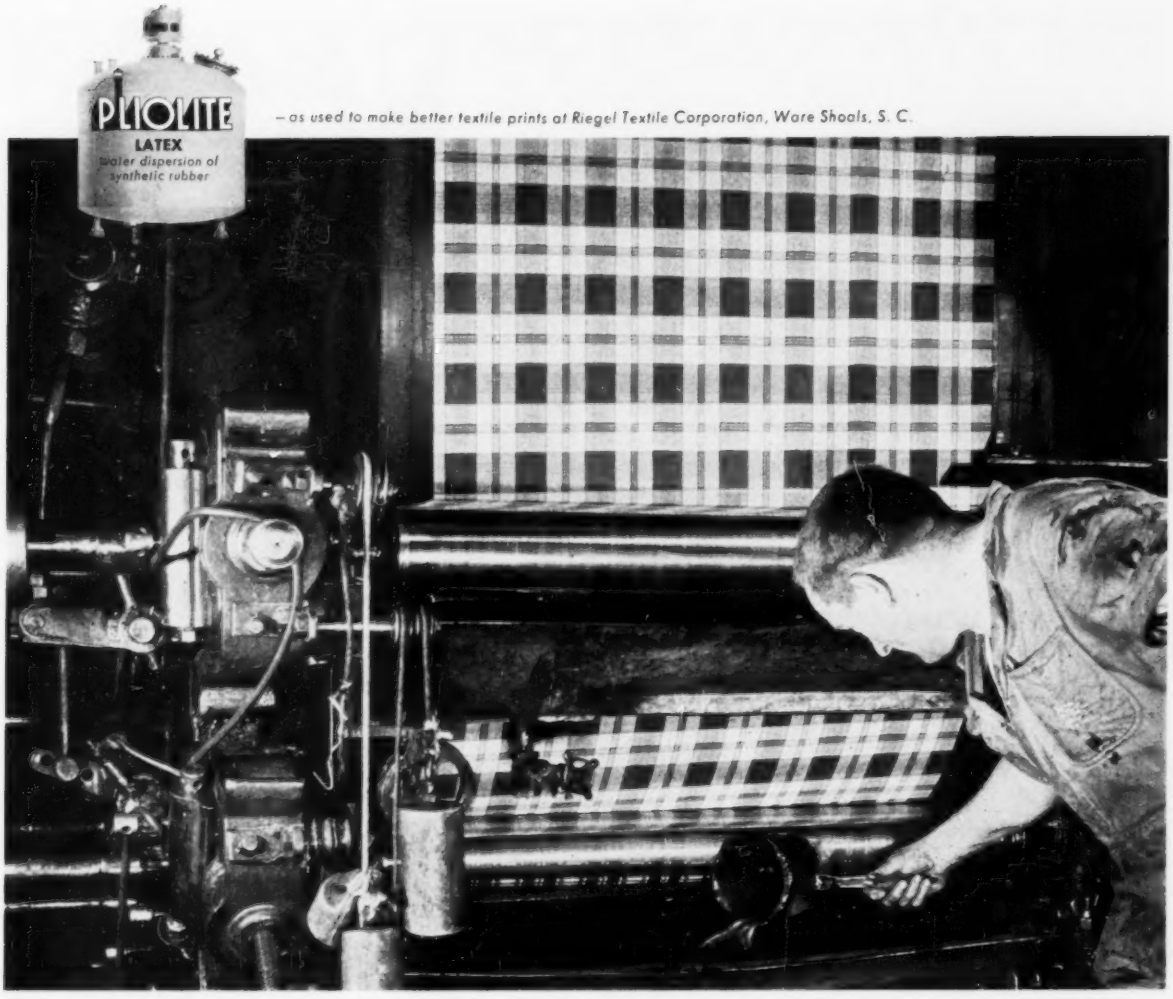

—as used to make better textile prints at Riegel Textile Corporation, Ware Shoals, S. C.

There's less "crocking," less "tarnishing" with PLIOLITE LATEX

If you're having trouble with crocking in your emulsion printing, here's a tip: Look into the many synthetic latices by Goodyear.

Take the case of one industry leader. *Eight years ago,* he started modifying his emulsions with PLIOLITE LATEX. The results are shown in the crocking test at left.

PLIOLITE LATEX not only minimizes crocking, but also reduces "tarnishing"—effectively cutting down roll clean-up time. What's more, it permits good color values, adds to the binding strength of the emulsion and improves the print's resistance to the abrasion of laundering.

Why not learn more about PLIOLITE LATEX and the other latices in the Goodyear line? Full details, including the latest *Tech Book Bulletins,* are yours by writing Goodyear, Chemical Division, Dept. M-9439, Akron 16, Ohio.

GOODYEAR

CHEMICAL DIVISION

Pliolite—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

In many mills Stowe-Woodward's new SEALSKIN cotton slasher roll covers have already proven that they offer more than any cover previously available. For example:

SEALSKIN outlasts other covers by 100% in almost every case.

SEALSKIN has lasted as much as 25% longer between grindings. (And grinding is easy. You can do it in your own shop.) Result: less down time, long trouble free operation, less maintenance costs.

SEALSKIN resists all types of sizes and can be used interchangeably in front or back position.

SEALSKIN has a uniform density, which means consistent size pick-up and closer control of your operation.

SEALSKIN gives you none of the problems previously found in slasher rolls. No more "blistering", "cracking", "crazing", "swelling".

SEALSKIN has a firm velvetlike surface. Gentle on the warp threads, yet with outstanding resistance to wear.

Ask your Stowe-Woodward Sales Engineer for the **SEALSKIN** *Bulletin. It gives you all of the facts. Or, write to:*

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Griffin, Georgia
on the West Coast
HUNTINGTON RUBBER MILLS, INC.
Seattle, Washington
Portland, Oregon

SHORTS & REMNANTS

新年恭喜

That's Chinese for "Happy New Year and may you all eat to 120 years." And that's our 1960 wish for all of you.

Speaking of China, did you know that every Chinese celebrates his birthday on New Year's Day (Chinese New Year's Day, that is)? And that a Chinese is considered one year old on the day of his birth? So a Chinese baby born on the last day of the old year is two years old the next day!

► And speaking of eating for 120 years reminds us that we were recently invited to join the Stauffer Home Reducing Plan. But we had to reply, regretfully, that our home is already too small.

► Here is old friend and long-time TI contributor, **John Duerst**, at his "chalet" in Clarkdale, Ga.:

John retired recently from his job as research engineer at the Clarkdale plant of Coats & Clark, Inc. We certainly admire the goatee he's grown since retiring, and are glad to see that he still keeps up with the industry by reading TI.

► We started off 1959 with a poem

Amco Heliclone Loom Cleaner in Mayfair Mills, Arcadia, S. C.

Always "Working For Quality" at MAYFAIR MILLS...

AMCO HELICLONE® LOOM CLEANERS

Amco Heliclone Loom Cleaners, which provide automatic, continuous cleaning of 1676 looms at Mayfair Mills, are helping this famous manufacturer maintain his reputation for superb quality and top efficiency.

For the complete money-saving facts about Amco Loom Cleaners, call the American Moistening Company — an organization with more than 70 years' experience serving the textile field.

Rotating nozzles driven by air streams form overlapping circular paths. Results: high velocity bursts of air over loom and warp surfaces for best cleaning. Supplementary outlets clean track and ceiling.

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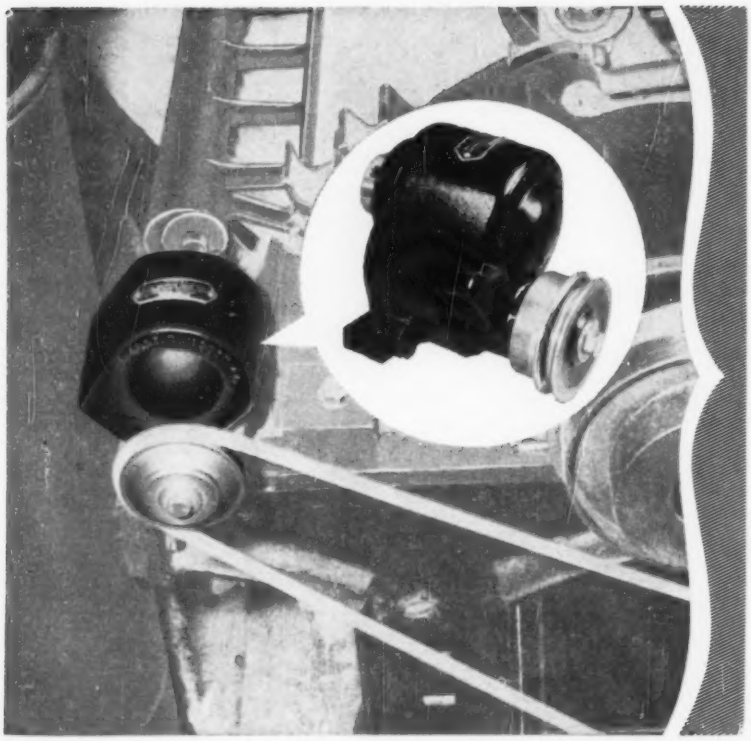
American Moistening Company, Cleveland, North Carolina
Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

Cleveland-Rowan Plant of American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.



OUTSTANDING SUPERIORITY OF SOUTHERN STATES COMB BOXES PROVED IN NATION'S MILLS

More than 50,000 Southern States Comb Boxes have been placed in service during the past 11 years—equal to 60% of all the nation's cotton cards. Many mills have changed over 100%.

This overwhelming acceptance proves conclusively that mills can easily justify the small investment. Cardroom overseers quickly recognize the savings that result from their use: no oiling, cleaning or maintenance for the life of the unit; steady, even strokes to drive the comb with perfection; elimination of hot-running, leaky, rattling old-style boxes and their headaches.

Southern States Comb Boxes are furnished complete with an adjuster base for mounting on any make of cotton card. Bases are double tapped to permit rapid mounting on either right or left hand cards. Installation is quick and easy.

Let us show you with facts and figures how it has paid hundreds of mills to install Southern States ball-bearing, sealed-for-life, Comb Boxes; prove how much they will save you in one year. Write direct for a representative to call at your convenience.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

SHORTS & REMNANTS

(from page 6)

by old friend **William G. Liske,** of Cyril Johnson Woolen Co., Stafford Springs, Conn. And here to start off 1960 is part of another of Mr. Liske's poems:

Wishful Thinking

If I were ever young again,
There is one thing you can bet;
Instead of learning textiles,
I would be a space cadet.

My clothing would be metal.
Most likely stainless steel;
No knots, and slubs, or double ends—
How good it would make me feel.

I'd fly around in the stratosphere,
And perhaps I'd reach the moon;
If they had any spinning there,
I'd leave it mighty soon.

* * *

In a textile worker's heaven,
There should be cloth of purest gold;
To be cool in summer, keep its press,
And in winter bar the cold.

This is just a bit of satire,
When I'm tired of the game;
No doubt if I started over,
My trade would be the same.

The Woes of Wash-and-Wear

Dorothy Diamond, woman's editor for *Printer's Ink,* recently conducted a survey on the problems of doing the family wash. She says, ". . . the women interviewed were extremely vociferous on the topic of so-called wash-and-wear. 'Oversold' is the word that echoes through the interviews . . . one woman summed up the feelings of the group: 'We want wash-and-wear that does just that.'" Unfortunately, if she buys an un-

John Read (right), professor of chemistry, University of St. Andrews, Scotland, receives the 1959 Dexter Award in the history of chemistry from Sidney M. Edelstein, secretary of the Division of History of Chemistry, American Chemical Society. The award, which also carries a $500 prize, was established by Dexter Chemical Co., of which Dr. Edelstein is president. He is also chairman of AATCC's Committee on Archives.

ROBERTS SPINNING — ARROW M-1

THE FRAME PREFERRED BY SPINNERS

COTTON SYSTEM SPINNING

for carded and combed cotton short and long staple

for synthetics and blends up to 3 inch fiber lengths

yarn numbers from 2's to 120's

More than 625 of these highly productive Roberts narrow spinning frames have been bought by mills in the United States, in addition to 725 other Roberts models, all since 1956. This makes a total of 1350 Roberts frames with almost 500,000 spindles . . . unmistakable proof that Roberts Spinning is preferred by Spinners for its unmatched flexibility, higher production speeds, yarn quality and economy.

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ROBOURN-ROBERTS COMPANY, LTD.; Burton-On-Trent, Staffordshire; England

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

(from page 8)

known brand, she is only too likely to get stuck.

But textile men are doing their best to improve the situation, and that includes keeping up with the latest published information on the subject. Among those asking for reprints of TI's special section on wash-and-wear, published in Oct. 1959, were **R. C. Richardson,** tech. supt., Kerr Bleaching & Finishing Works, Inc., Concord, N. C.; **Victor T. Kao,** res. div., Chicopee Mfg. Corp., Milltown, N. J.; **Warren Boyer,** group leader, res., Joseph Bancroft & Sons Co., Wilmington, Del.; **Samuel C. Profio,** tech. dir., Duro Finishing Corp., Fall River, Mass.; **George A. Heath,** res. dir., Collins & Aikman Corp., Ca-Vel, N. C.; **John F. Shaw,** v-p, Chicopee Mfg. Corp., Chicopee Falls, Mass.; **Harold W. Wolf,** Central Res. Lab., J. P. Stevens & Co., Inc., Garfield, N. J.; **H. Y. Jennings,** textile res., School of Textiles, N. C. State College, Raleigh, N. C.; and librarian, res. div., West Point Mfg. Co., Shawmut, Ala.; among others.

► Listed on the program of the 76th Annual Convention of the National Association of Woolen and Worsted Overseers: "Discussion of Sinners Problems." We've been to lots of conventions where a goodly number of sinners were in attendance, and we're glad to see that their special problems have at long last been given the recognition they need.

More on Milan

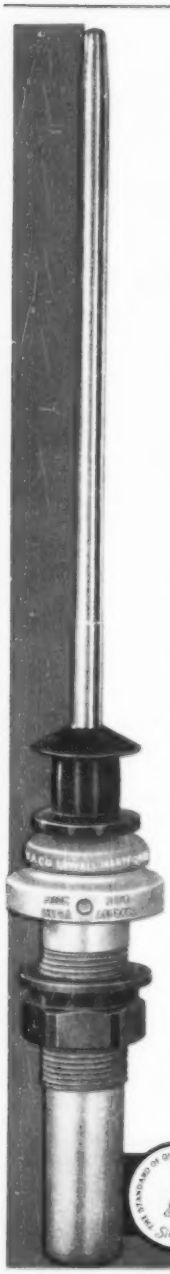
J. H. Bolton, Jr., vice-president, Whitin Machine Works, reports that the first completely analytical study of the International Textile Machinery Exhibition, held at Milan, Italy, in September, confirms the claim that the American Textile Machinery Exhibition-International, to be held next May in Atlantic City, will be the most important in the history of the industry. Briefly, while confirming that the Milan Show was both spectacular and expensive, the report shows that much of the space at the Show was occupied by knitting and sewing machinery, auxiliary equipment, and equipment (such as mules) no longer exhibited in the U. S. Further, much of the equipment displayed at Milan was not operating.

Therefore, the report concludes, on an individual exhibitor basis ATME-I will be more impressive and more comprehensive than any textile machinery show previously held. So make your plans NOW to be in Atlantic City during the last week in May.

Whatever the relative merits of Milan and Atlantic City, TI's readers were interested in our report on what was new at Milan. Some of those requesting further information: **I. Oppenheimer,** The Shen Mfg. Co., Philadelphia, Pa.; **J. H. McDowell, Jr.,** PA, Dixie Mercerizing Co., Chattanooga, Tenn.; **Mortimer Meyrich,** Meyrich Textile Co., NYC; **William Ewing,** Owens-Corning Fiberglas Corp., Granville, O.; **H. H. Klerx,** mgr., Holland Thread Co., Inc., Stroudsburg, Pa.; and **George H. Cady,** chief engineer, Davis Mills Corp., Fall River, Mass.; **Lansing T. Hall,** Burlington Industries, Inc., Greensboro, N. C.; and **J. C. Shaw, Jr.,** mgr., Rocky Creek Mills, Turnersburg, N. C., to name the first few who wrote.

Reader Is Bugged

"Your article on making fabrics 'bug proof' [TI for Sept. 1959, p.



6 good reasons why you should replace with SACO-LOWELL HARTFORD TOP DRIVE FILLING SPINDLES

1. More yarn on the bobbin due to tighter wind resulting from more uniform tension
2. Anti-friction ball bearings last longer, require less lubricant
3. Savings in power consumption due to smoother operation
4. Longer lubrication cycle, usually once every 5 years, cuts labor cost
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Saco-Lowell Hartford spindles include a complete line of spinning, filling, warp and twister spindles.

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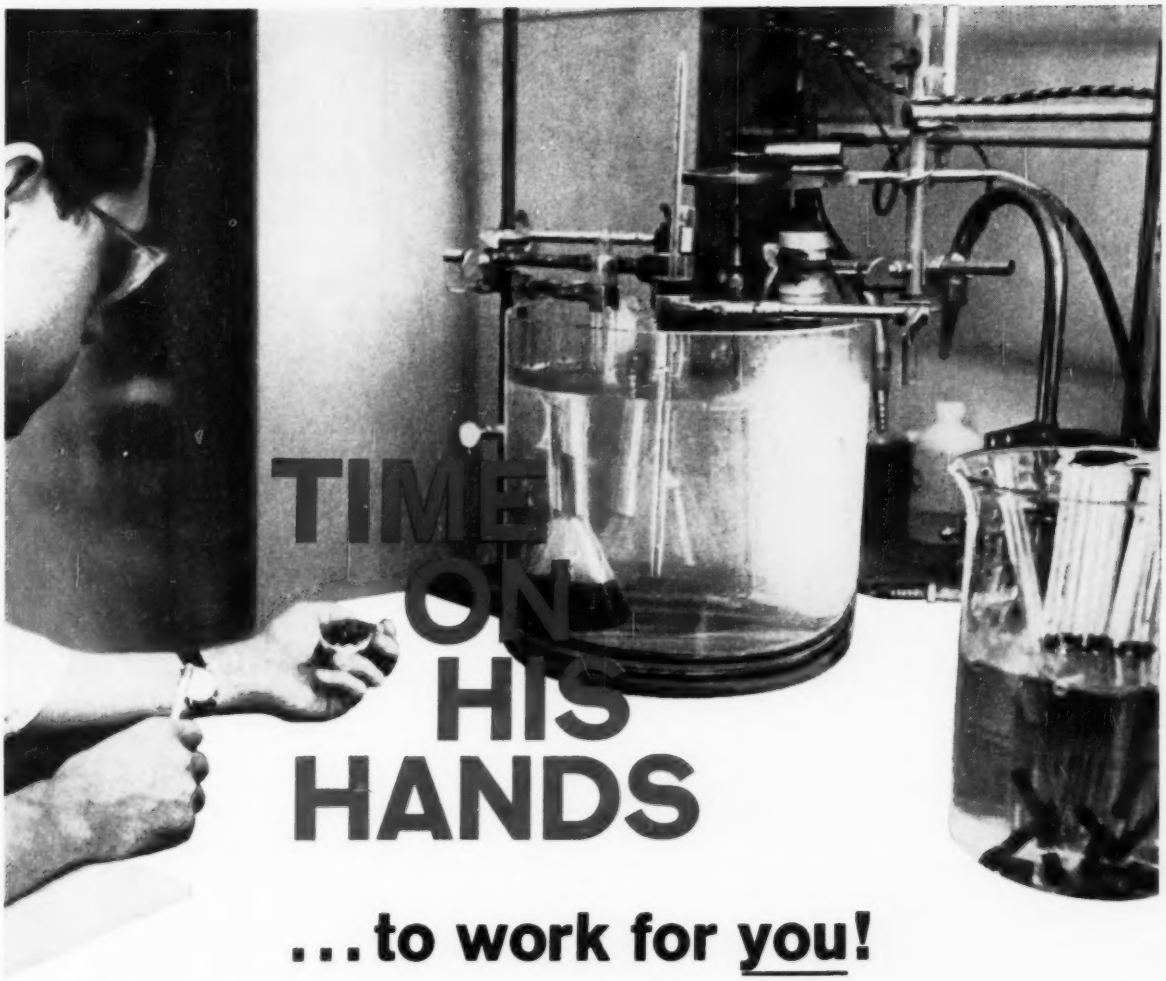

TIME ON HIS HANDS

...to work for you!

This laboratory specialist in the Textile Section of SOLVAY Technical Service, working with an industry-experienced field staff, stands ready to give individual help to textile men like yourself.

For example, the SOLVAY Activated Hydrogen Peroxide Bleaching Process was developed by Technical Service to meet an industry need for an improved cotton bleaching method. With it, you can save up to *50%* in bleaching chemical costs, and can equal or *surpass* your present whiteness!

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PHOTO: This SOLVAY technician is measuring fluidities of a customer's cotton samples.

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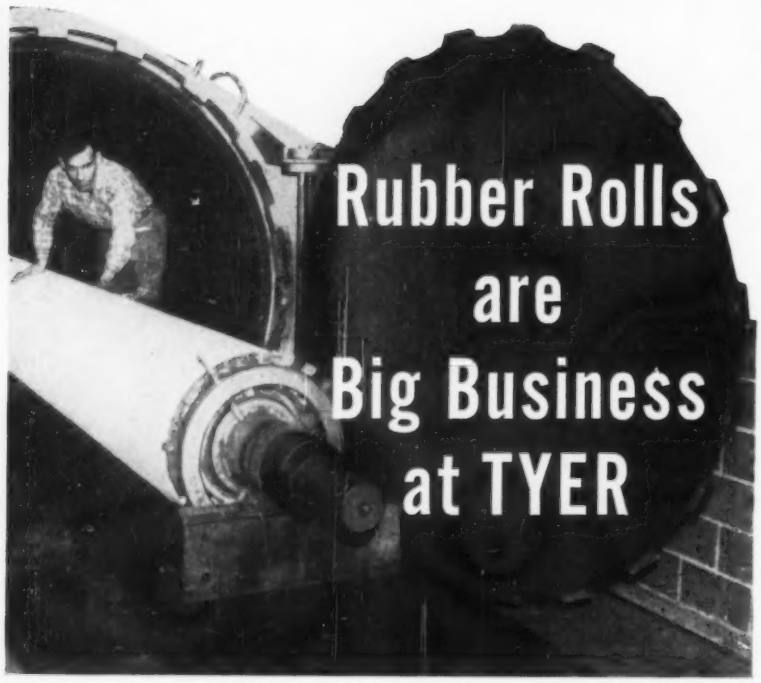
EN-10

Please send without cost:

- ☐ Brochure on SOLVAY Activated Hydrogen Peroxide Process
- ☐ Call to discuss technical problem outlined in attached letter.

Name_____
Position_____
Company_____
Phone_____
Address_____
City_____ Zone____ State____



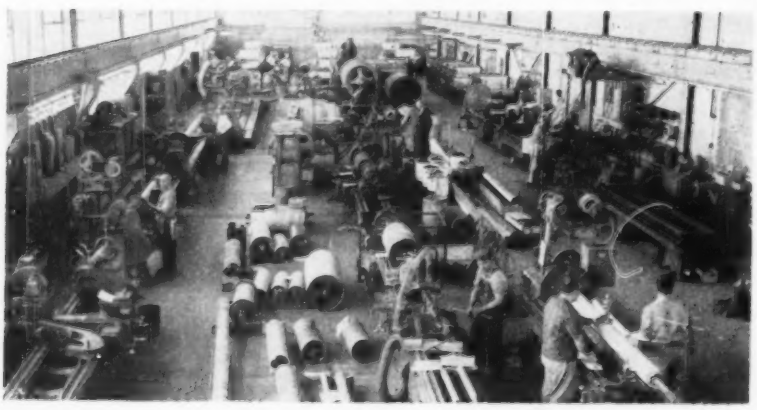
Tyer's expanded facilities for covering rubber rolls include the huge new vulcanizer shown above. 37 feet long, it has an inside diameter of 7 feet. Tyer grinders now accommodate rolls up to 60 inches in diameter and 366 inch face.

Tyer roll fabrication ranges in scope from tiny 1-ounce envelope rolls to giant suction press rolls used by paper mills. Hundreds of different compounds have been developed for our customers to take care of the functions to be performed by each individual roll.

In more than 30 years of roll manufacturing, Tyer has found the answer to many difficult rubber roll problems. Chances are, we can solve *your* problems, too. Write today for free brochure or a visit from a Tyer sales engineer.

TYER *Rubber Company*

ANDOVER, MASSACHUSETTS, U. S. A.



SHORTS & REMNANTS

(from page 10)

116] is most interesting. Can you give us more information on Roy J. Pence's compound P-61? Is it commercially available? Since we cannot send a stock of our insects to you, could a sample of P-61 be sent to us?"

D. H. HELLMAN
Petare Textil, C.A.
Caracas, Venezuela

► P-61 is still experimental. You can get further information on it from Mr. Pence, at the University of California, Los Angeles 24, Calif.

Inventory Tied Up

A San Francisco manufacturer is reported to have had 100 neckties made up from the lavender bed sheets used by Kim Novak in the movie, "Vertigo." The latest word is that he had reduced the price from $10 to $3.50, and still no takers. And this plaintive little ad appeared in the classified section of the *New York Times* recently: "Thousands of hula hoops ready for immediate delivery. No reasonable offer refused."

High-Style Sheep

A reader who was greatly interested in our brief article (p. 96, TI for Sept.) on sheep that wear coats to protect their fleeces, suggests that the Wool Bureau and/or Woolens and Worsteds of America may be missing a bet in not having Fashion Shows for Sheep, say at Madison Square Garden. "This would be a unique promotion for wool," he says. And that reminds us—we are told that an ex-farmer in Kidlington, England, has gone into the business of making foam rubber mattresses for cows. His pitch is that cows who sleep on his mattresses get a longer, better night's sleep, wake up refreshed, and so produce more milk. The mattresses cost about $36 each, in case anyone is interested.

Miscellaneous Wants

Data on lifter rod bushings—**Troy L. Phelps,** supt. of spinning, Rocky Mount Mills, Rocky Mount, N. C.

Further information on Rando-Webber—**Charles Maldoff,** Formcraft Fabrics Co. Ltd., Montreal, P. Q.

Details on "Chemigum" —**Olin E. Wilson,** prod. supervisor, Dublin Finishing Co., Dublin, Va.

Continued on page 14

Picker Overhauling Is Simple When You Depend On . . .

Aldrich Repair Service

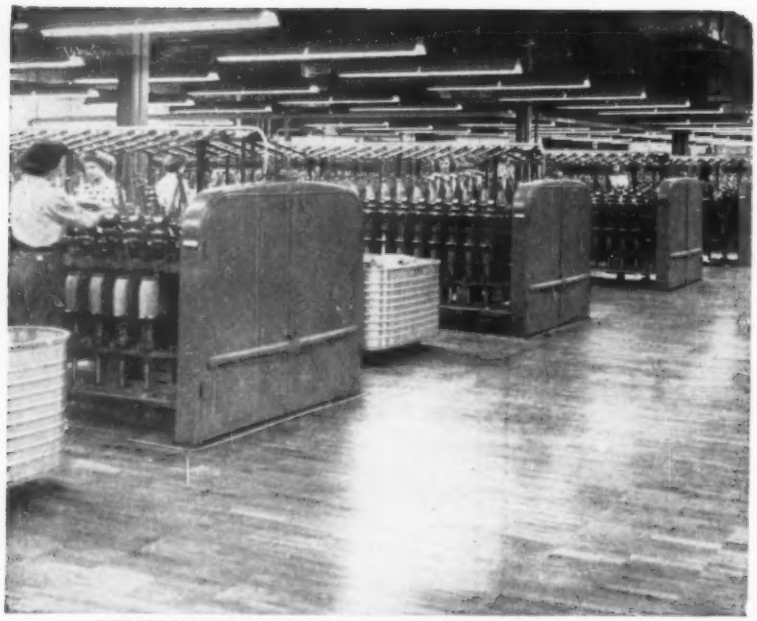
We furnish skilled men for reworking pickers, and can deliver to these men any needed parts within 24 hours in most southern states, and within 48 hours to almost any cotton mill in the United States. This makes thorough overhauling a simple matter. Anything needed for a good job can be had at once, while the machine is down for repairs.

If you do your own overhauling, this speedy delivery service is just as valuable. You don't have to wait for repair parts — they are there when you want them.

We manufacture and install complete blending, opening, and picking systems for cotton and synthetics, and cleaning systems for cotton.

Aldrich Machine Works

Greenwood, South Carolina



DIRT-RESISTANT Tennantized floor allows faster sweeping. Saves manhours.

Why most money-making mills have TENNANT-maintained floors

Mills that make money *today* usually know their maintenance costs to a penny.

That's why about 9 out of 10 successful mills, large and small, use the TENNANT SYSTEM of Floor Maintenance.

They know, from their own cost records, that this system provides clean, bright floors *at the lowest cost per sq. ft. of any floor maintenance method* available today. Here's why:

SAVES MANHOURS—*Tennantized* floors have 3 times the dirt resistance of most textile floors. Saves cleaning time, cuts sweeping costs, etc.

How the TENNANT SYSTEM cuts floor care costs...

1 **SAVES TIME.** Dirt is easily wiped off surface.

2 **SAVES FLOOR SEAL.** Tennantized floors seldom need refinishing.

3 **SAVES BUFFING.** New method brightens floor; cuts buffing time as much as 80%.

REQUIRES LESS FLOOR SEAL—New custom-fitted TENNANT seals *last longer than any comparable materials we know of.* Cuts annual seal costs and recoating expense. WRITE TODAY *for full details. G. H. Tennant Co., 735A N. Lilac Drive, Minneapolis 22, Minn.*

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

SHORTS & REMNANTS

(from page 12)

Information on roving cans—**R. S. Gregg,** knitting supt., Ragan Knitting Co., Thomasville, N. C.

Reprint of "Tufted 'Sheepskins'" (TI for May 1959)—**J. M. O'Connell,** pres., Kentucky Chenille Co., Louisville, Ky.

Twenty-five reprints of "Do You Check Gear Run-Out Too?" (TI for October 1959)—**P. H. Burrus, Jr.,** v-p and gen. mgr., Jackson Mills, Wellford, S. C.

More information on warp-knitted bandages (TI for August 1959)— **R. Gittel,** Tricotex Co. Ltd., Sherbrooke, P.Q.

More data on TravelVac Lint Removal—**John W. Estes, Jr.,** gen. overseer, Mt. Vernon Mills, Newnan, Ga.

Who made the nylon dam over the Los Angeles River (TI for September 1959)?—Blumer Sohne & Cie., Rorbas-Freienstein, Switzerland. That was Firestone Tire & Rubber Co.

Further information on Vari-Spin Drive—**I. B. Covington,** supt., Little Cotton Mfg. Co., Wadesboro, N. C.

Book on knitting pile cloth—**F. G. Morton,** Clydebank Knitting Co., Inc., Fort Plain, N. Y. As far as we know, there isn't such a book.

Reprint of "Workable Incentive Plan for Doffers" (TI for March 1950)—**Marc Cournot,** Henri Offroy & Lemarchand Freres, Malaunay, France.

More information on Canteen service—**William Goldman,** gen. mgr., National Worsted Mills, Jamestown, N. Y.

Source of supply for steel doctor plates for machine printing, with chrome plating on one side only—**Anthony Lichty,** printing foreman, Dartmouth Finishing Co., New Bedford, Mass. Referred to several possible sources of supply. Can any reader help Mr. Lichty?

Copy of March 1959 TI—**M. Bovyn,** gen. mgr., Industex Ltd., Port Elizabeth, South Africa.

Further data on pine oil—**B. Foy Hege,** National Weaving Division, Beaunit Mills, Lowell, N. C.

Information on woolen cards, mules, and spinning frames—**Harold J. Fligg,** yarn supt., Moniteau Mills, California, Mo.

Where to locate **Marvin Gelber,** author of "Methods Study Doubled Seamer Production" (TI for August 1959)—Plaut & Cia., Buenos Aires, Argentina. Write him c/o S. J. Capelin Associates, Inc., 261 Madison Ave., New York 16, N. Y.

Continued on page 26

HARSHAW

Zinc Nitrate Flake

Readily Soluble
High Purity
Less Fines
Easy to Handle

Harshaw Zinc Nitrate Flake is especially suited for polymerizing resins currently being used for wrinkle-free and wash-and-wear fabrics.

Harshaw Zinc Nitrate Flake is produced under rigid control assuring the user of uniform resin catalysis at all times.

Harshaw Zinc Nitrate Flake measures about $\frac{3}{32}$" thick by ½" long, thereby reducing dust and fines to absolute minumum.

Packed in 300 or 100 pound Leverpak drums with polyethylene liner, Harshaw Zinc Nitrate Flake is available for immediate shipment. Write for samples and prices.

TYPICAL AVERAGE ANALYSIS:

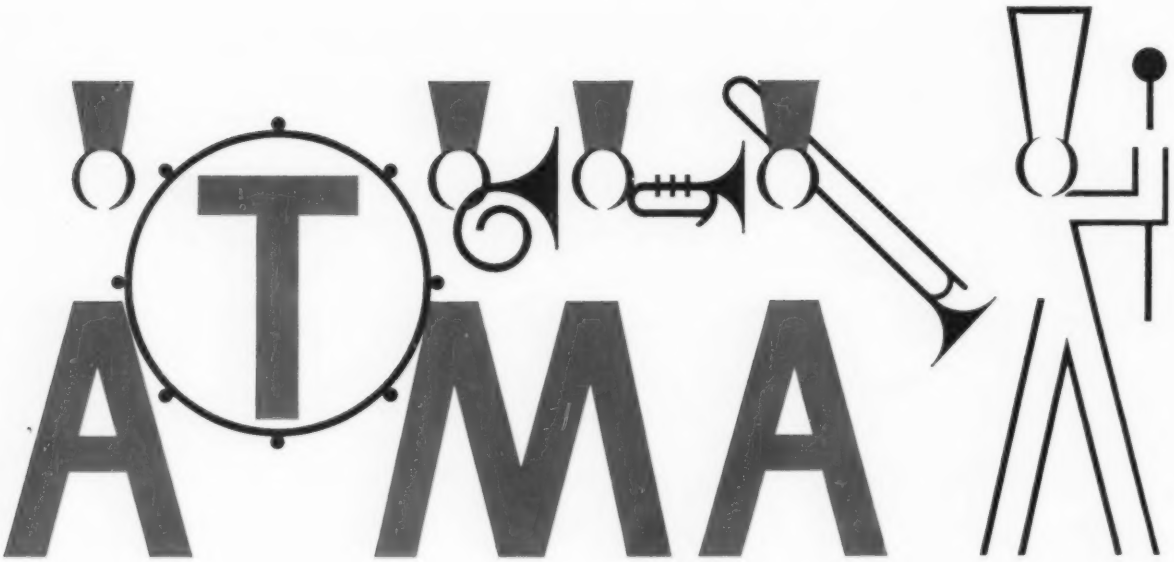
Zn	25.20%
Fe	0.001%
Pb	0.005%
H_2O Insoluble	.008%
pH of 5% solution	5.1

HARSHAW

THE HARSHAW CHEMICAL CO.

1945 E. 97th Street, Cleveland 6, Ohio

CHICAGO • CINCINNATI • CLEVELAND • DETROIT • HASTINGS-ON-HUDSON, N. Y.
HOUSTON • LOS ANGELES • PHILADELPHIA • PITTSBURGH



Parade of Progress

JOIN THE PROFIT PARADE! VISIT CONVENTION HALL IN ATLANTIC CITY, N.J. IN 1960* AND SEE THE WORLD'S LARGEST COLLECTION OF ADVANCED TEXTILE MACHINERY. OVER THREE HUNDRED (300) EXHIBITORS WILL DISPLAY OVER THIRTY MILLION DOLLARS ($30,000,000.00) WORTH OF MODERN EQUIPMENT. RECENT ADVANCES IN TEXTILE CHEMISTRY WILL BE MATCHED BY THE LATEST MECHANICAL DEVELOPMENTS.

ALL UNDER ONE ROOF! PLAN NOW TO JOIN THE "PARADE OF PROGRESS" IN 1960*.

THE LARGEST EXHIBITION HALL UNDER ONE ROOF CONVENTION HALL HAS 300,000 SQ. FT. OF SPACE.

A SEASIDE SHOW PLACE WITH EVERY FACILITY FOR YOUR COMFORT AND ENTERTAINMENT.

MORE THAN 300 EXHIBITORS, UNDER A SINGLE ROOF, WILL DISPLAY THE LATEST TEXTILE MACHINERY AND TECHNIQUES.

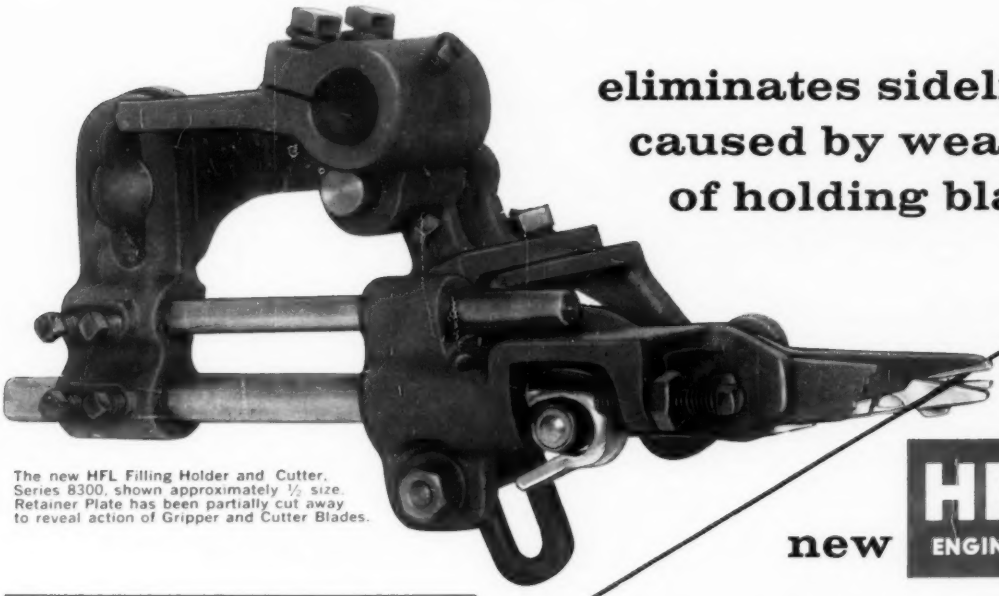
American Textile Machinery Exhibition

International

ATLANTIC CITY CONVENTION HALL, NEW JERSEY, U.S.A. *MAY 23 — 27, 1960

Free admission tickets are available by writing to: Albert C. Rau, Manager • 332 Park Square Bldg. • Boston 16, Mass.

another **preferred** loom part



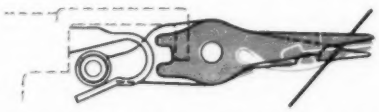
The new HFL Filling Holder and Cutter, Series 8300, shown approximately ½ size. Retainer Plate has been partially cut away to reveal action of Gripper and Cutter Blades.

eliminates sidelines caused by wear of holding blades

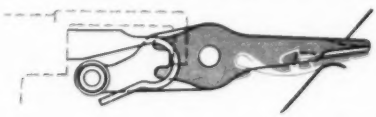
new HFL ENGINEERED

FILLING HOLDER AND CUTTER*

At the beginning of the cycle, both gripper and cutters are wide open to permit filling of any type or size to pass between them in a straight line.



Next, the all-steel gripper, with improved toggle construction, closes on the filling without bending it, and continues to hold during the cutting.



At the end of the cycle, the cutter blades cut straight across the filling with a scissor-like action; the filling is still held to prevent drag-ins.

Write for Holder and Cutter Brochure — 5

*Patented and Patents Pending

The HFL Holder and Cutter is the effectual answer to the problem of costly seconds resulting from drag-ins and sidelines caused by wear or lag of fibre holding blades.

This new part can accommodate, without any adjustment, all types and sizes of filling (cotton, rayon, fiberglas, etc.). Its hardened steel gripper holds the filling firmly and in a straight line, before and during the cut. There is no fibre to wear, and no bending of the filling, as with holding blades of conventional cutters. Only one factory-adjusted setting is necessary for the lifetime of this part for correct opening and closing the gripper and curved cutter blades in exactly the proper sequence.

Tested on 800 looms throughout the country under actual operating conditions, this new loom part is a performance-proven unit. It has also been tested at 200 oscillations per minute for a period equivalent to a 5-year mill run. Disassembly after test showed no measurable wear.

The new HFL Filling Holder and Cutter, Series 8300, represents a complete departure from the conventional Thread Cutter in action and material. It will help increase volume, improve quality, and eliminate downtime. Livermore Leadership again asserts itself by presenting another preferred loom part to solve one more problem in the weave room!

HFL IMPROVED LOOM PARTS

H. F. LIVERMORE CORPORATION

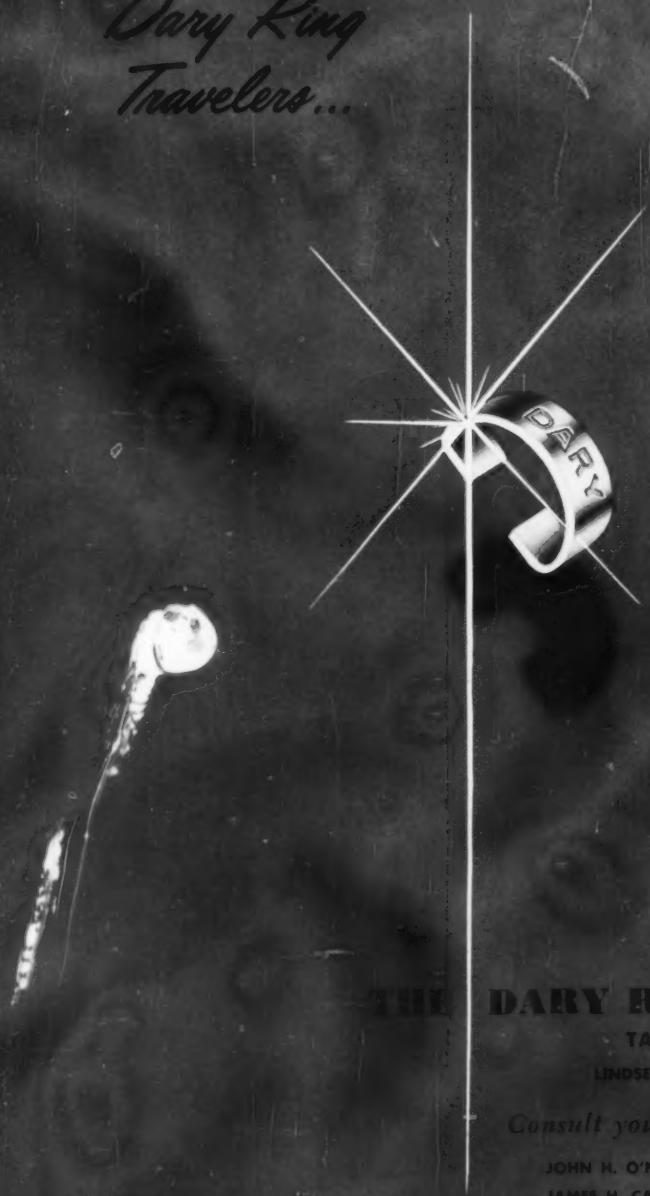
ESTABLISHED 1887

EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

SOUTHERN DIVISION
GREENVILLE, S. C.

Since 1898

Dary Ring Travelers...



THE DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

LINDSEY I. PHILLIPS, Treasurer, Taunton, Mass.

Consult your friendly Dary Representative:

JOHN H. O'NEILL Box 720, Atlanta, Ga.

JAMES H. CARVER Box 22, Rutherfordton, N. C.

CRAWFORD "JACK" RHYMER Box 2261, Greenville, S. C.

ONLY VISIBLE BLADES GIVE YOU SAFETY YOU CAN SEE!

• The men who pull the switches will tell you what can happen when a switch, *believed* to be open —*isn't*. A lot of things can happen—and every one of them is bad. Personnel safety is in jeopardy. Motors can single-phase. Machinery and work can be damaged. Down-time can skyrocket.

Doesn't it make sense to insist on **V**isible **B**lade construction which gives you a road block against any of those possibilities? Doesn't it make equally good sense to insist on the safety switch which gives you that construction—plus a lot of other performance advantages? Evidently it does, because *Square D switches have never been out of first place in more than 50 years!*

They cost no more... why settle for less?

MAIL the coupon for latest Safety Switch Bulletin

Square D Company, Dept. SA-122
1601 Mercer Road, Lexington, Kentucky

Please send me your latest SAFETY SWITCH BULLETIN

NAME_____

COMPANY_____

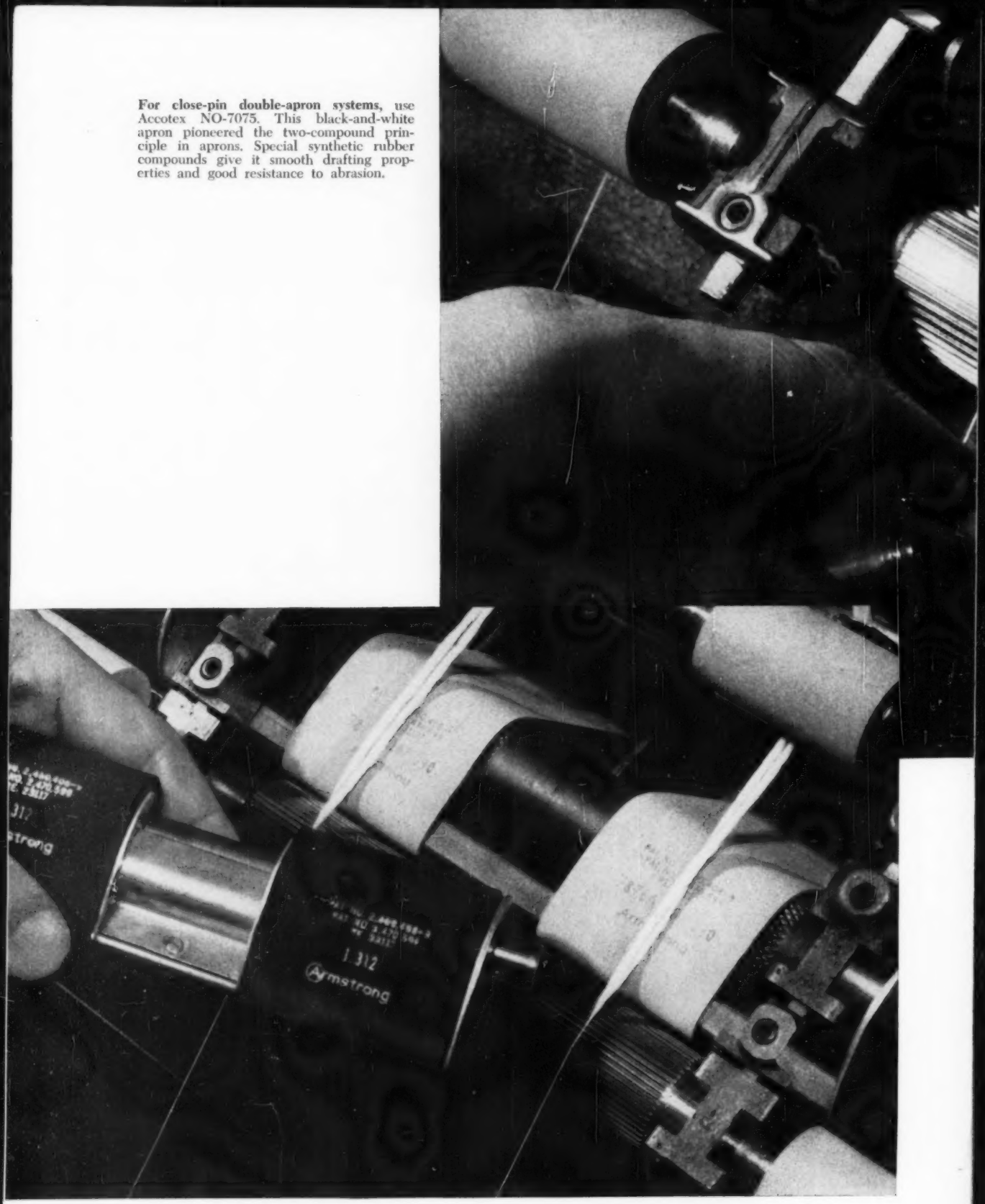
ADDRESS_____

CITY_____ ZONE____ STATE_____

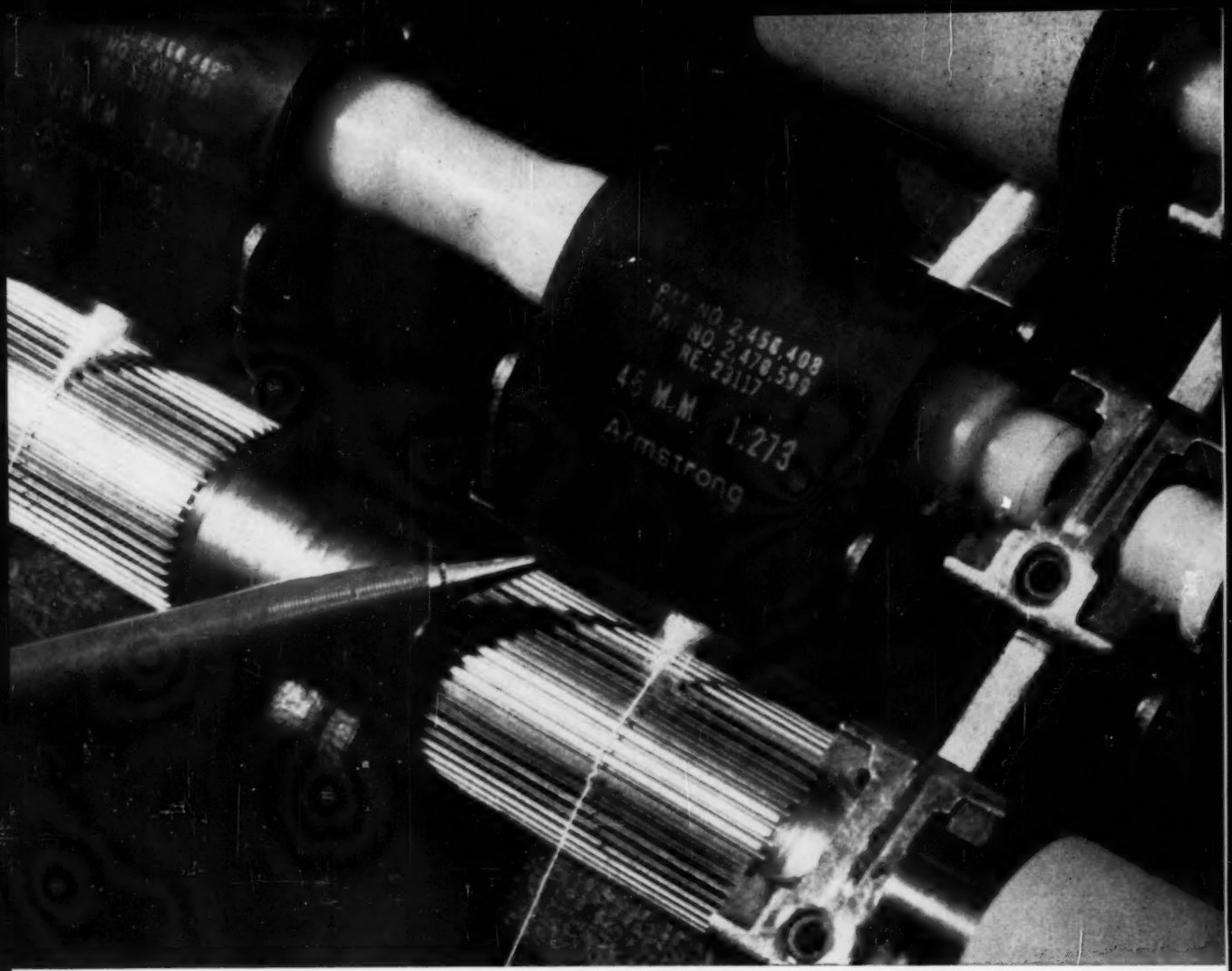
SQUARE D COMPANY

wherever electricity is distributed and controlled

For close-pin double-apron systems, use Accotex NO-7075. This black-and-white apron pioneered the two-compound principle in aprons. Special synthetic rubber compounds give it smooth drafting properties and good resistance to abrasion.



For long-apron systems, Armstrong Accotex NO-7876 is recommended. Two special rubber compounds give it super-flexibility, superior fiber-handling characteristics, and unusual resistance to flex cracking and ozone.



Whatever your fiber or spinning system, an Accotex apron gives you quality yarn

Whether you use a close-pin double-apron system or a long apron system, there's an Armstrong Accotex Apron specially designed to give you long service and superior yarn control.

Every Accotex Apron is built with Armstrong's patented three-layer construction. The underside is a synthetic rubber compound with just the right frictional qualities to assure smooth drafting action and accurate tracking. The compound of the outer layer has superior fiber-handling characteristics to give strong, uniform yarn with any fiber or blend.

The center layer—a strong cord interliner—assures dimensional stability through years of spinning. These aprons can't stretch or curl. Yet they have the flexibility required for smooth performance.

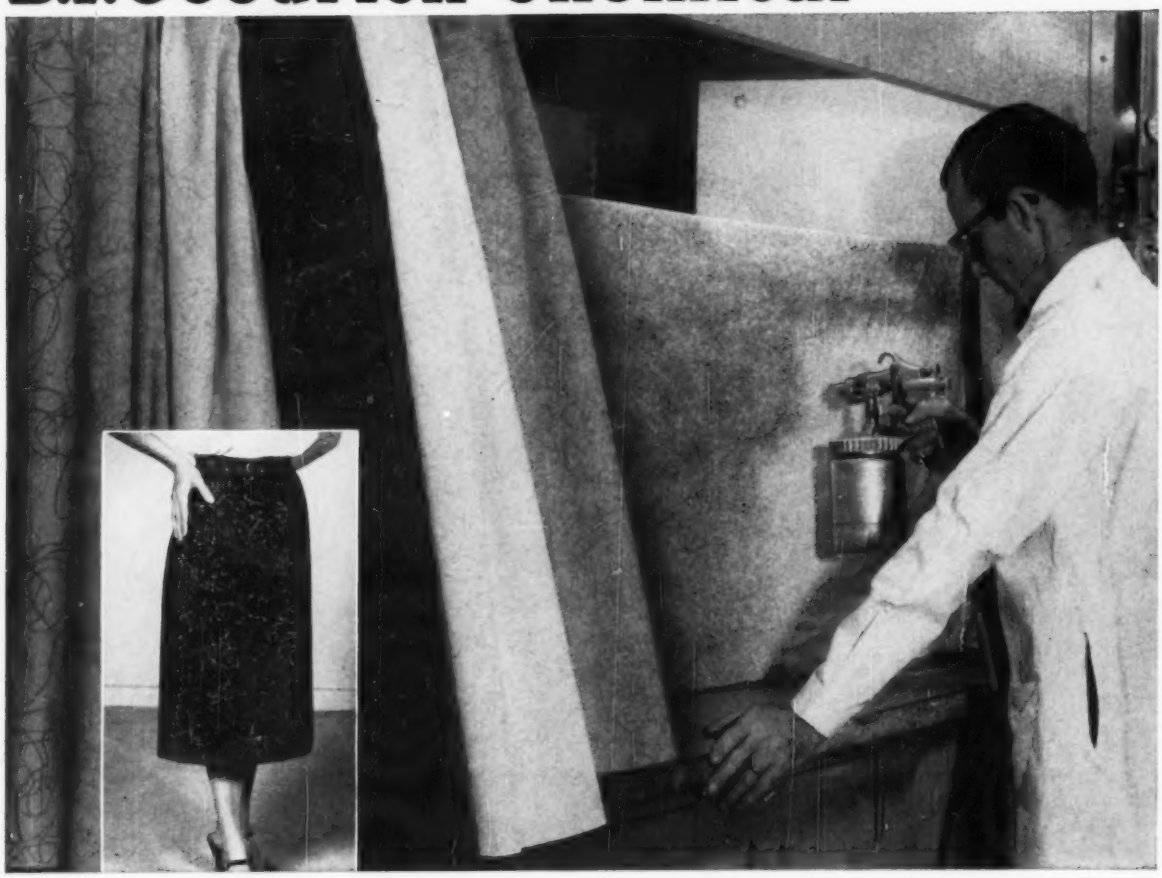
Armstrong will be glad to arrange a test installation of Accotex Aprons in your own mill. Contact your Armstrong man or write Armstrong Cork Company, Industrial Division, 6401 Ivy Street, Lancaster, Penna.

Armstrong ACCOTEX APRONS

1860–1960 Beginning our second century of progress

News about

B.F.Goodrich Chemical *raw materials*



Veil-spraying . . .

New, low-cost way to get novel decorative effects

A new and simplified method for applying patterns and textures to textiles has come from B.F.Goodrich Chemical Company laboratories. Designs of Geon vinyl plastics or latices can be applied to any type of fabric—non-wovens, wovens, knits, including tight or loose constructions from twills to scrims.

Spatter and swirl patterns approach the regularity of printed designs—yet there is no need for high-cost engraved rolls. Versatile Geon vinyl lets you use any color or combination. A secondary but often useful advantage: Geon adds far greater durability and wear-resistance.

The sprayed-on coating is extremely flexible, washable, and dry cleanable. In many cases, a three-dimensional effect can be produced with practically unaltered hand.

The process is based upon inexpensive, readily available equipment. You can get complete information by writing to Dept. KA-1, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

PRODUCTS FOR TEXTILE IMPROVEMENT

B.F.Goodrich Chemical Company
a division of The B.F.Goodrich Company

B.F.Goodrich GEON vinyls • HYCAR rubber and latex • GOOD-RITE chemicals and plasticizers

Spartan Mills leads with NEWEST in Frame Cleaning

To keep more frames cleaner than ever before, Spartan Mills is first with the newest combination for cleaning:

1 BAHNSON CROSS-JET CLEANER

- Flexible trunks for each side of frame clean creel, drafting system, and frame. Multiple air nozzles in trunks provide total frame cleaning.
- High air handling capacity with adjustable air volume for each area of frame.
- Oscillating air outlets provide 180° overhead cleaning, plus track and conductor bar cleaning.

2 BAHNSON VERT-I-RAIL TRACK

- First modern creel-mounted, single rail I-beam track offered for frame cleaners.
- Wider surface for wheel contact results in minimum track wear, maximum track life.
- Shielded conductors are open at top and bottom for easier air cleaning and maintenance.

Bahnson **AIR-O-MATION**

AIR AT WORK FOR INCREASED PROFITS

THE BAHNSON COMPANY, WINSTON-SALEM, N. C.

These two travellers

The Coats & Clark Representative is a service engineer and expert in traveller application. He will work with your plant engineers to help improve twisting room performance and cut your production time and costs.

The Coats & Clark Nylon Traveller has been tested and proved by 20 years of research, plus practical application in the leading textile companies. Made in over 200 types, it is guaranteed to cut production time and costs.

can help you cut costs

Coats & Clark probably know more about twisting traveller application than anyone else in the world.

The Nylon Traveller was originally developed in our mills to help solve our own problems. In the last 20 years, we have met and solved countless twisting room problems for top companies in the cotton, woolen, worsted, synthetic, tire and fiberglas fields. We'd like to share this experience with you.

Your Coats & Clark Representative is an expert in traveller application. He will be happy to work with you to help improve speed, quality, and performance in your particular type of mill.

Here are some of the ways the Coats & Clark nylon traveller can help you cut costs:

- Up to twice as high spindle speed
- Less staining of yarn
- Much less oil required
- Longer-lasting travellers
- Less down time
- More yardage on your present bobbins
- Less end breakage
- Less stock of travellers
- Cooler running ring rails and rings
- Larger diameter rings, last indefinitely
- Greater safety for workers
- Cleaner, quieter frames and rooms

If you would like your C&C Representative to show you—in your own mill—how the Coats & Clark nylon traveller can help you cut costs, write, wire or telephone.

COATS & CLARK INC.

NYLON TRAVELLER DIVISION

1292-98 McCARTER HIGHWAY, NEWARK, N. J.

SHORTS & REMNANTS

(from page 14)

TI Rewritten

Another old friend, who prefers to remain anonymous (in fact, he insists on it), sends a note: "An old avocation of mine is writing new captions for pictures in TI. Your November 1959 issue was a particularly fertile source." He enclosed a batch, with the new captions, and here they are:

"I don't care what Mr. Wimbish says, it's freezing cold in this office."

"And this little piggy cried 'Wee . . . Wee . . . Wee' all the way home."

"Oh, George, you've bought me a seeing-eye dog!"

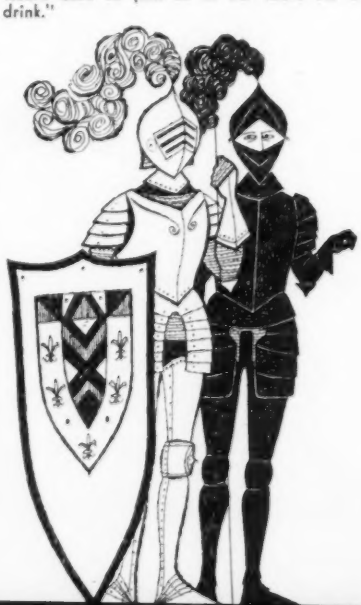
"As far as I'm concerned, he can take this club and . . ."

"Here it is, Inspector! I believe I've found the murder weapon!"

"NOW look! I told you I couldn't dance in this dress!"

"And thank YOU, Mr. Van Doren, for being on our show!"

"The boss and I were wondering if you girls would care to join us at our table for a drink."



Stop worrying about STATIC!
Simco engineers have developed an electronic static eliminator that is unconditionally guaranteed to end all textile static problems. Now, the assurance of static-free warps or slivers is yours! When Simco "Midgets" are used on creels, warpers, cards, finishing machines, etc., you get the advantage of the most effective neutralizers available . . . yet you enjoy lowest possible cost! Why not equip your machinery now? Simco is America's largest manufacturer specializing in anti-static equipment and sprays, anti-static cleaning devices, and static measuring meters.
the SIMCO company
920 Walnut Street, Lansdale, Pa.

For further information use Handy Return Card, Page 151

NEW LOW-COST PERMANENT SOFTENER FOR...

Emulsifiable
A-C® Polyethylene

OFFERS SUPERB "HAND" PLUS

- HIGHER ABRASION RESISTANCE
- IMPROVED TEAR STRENGTH
- EXTRA CREASE RESISTANCE
- REDUCED NEEDLE CUTTING

Whatever fabrics you finish, you can benefit from the new textile finishes now being formulated with A-C Polyethylene.

Already widely accepted as a *softener and finishing agent* to impart superb "hand," the new emulsions containing A-C Polyethylene benefit every type of synthetic and natural fiber in some way over other textile finishes. In addition to better "hand," they provide higher abrasion resistance, improved tear strength, extra crease resistance, permanence through multiple cleaning cycles, and better sewability through reduced needle cutting.

In wash-and-wear finishes, for example, A-C Polyethylene overcomes loss of "hand" and tear strength when used along with the thermosetting resins commonly employed in finishing wash-and-wear.

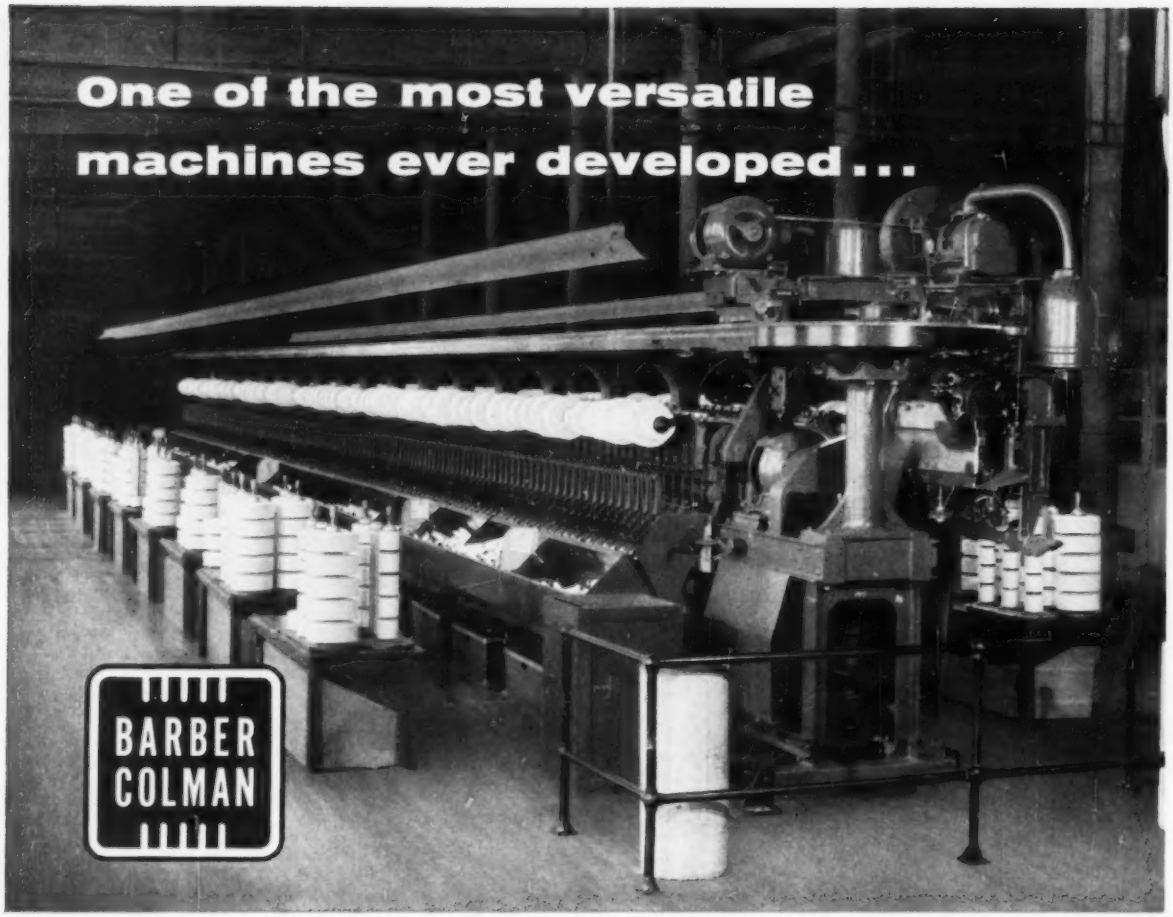
Write today for more information. Why not find out all about this new advance in textile finishing? Your textile chemical supplier either has an A-C Polyethylene finish on hand or can formulate one for your specific needs. Anionic, cationic and nonionic emulsions are available to fit all needs. (We are manufacturers of resins, not finishing emulsions.) Or write to us direct for complete information at the address below.

Allied Chemical

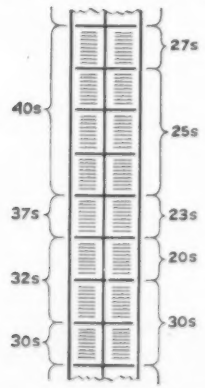
SEMET-SOLVAY PETROCHEMICAL DIVISION

Dept. 570-AW, 40 Rector Street
New York 6, N. Y.

National Distribution • Warehousing in Principal Cities



MULTIPLE-COUNT SPOOLER



Sale yarn mills and producers of piece goods that use various counts of different mixtures will find that this machine can be a very profitable investment. It is the famous and familiar Barber-Colman Automatic Spooler, but now you can wind . . .

A DIFFERENT COUNT EVERY 9 UNITS

The machine is built in "bays" between posts that support the traveler track, with nine bobbin-to-cheese winding units in each side of each bay. Empty bobbins, instead of being conveyed to a single sorting table, drop into separate boxes under each bay, thus enabling each group of nine units to be loaded and run with a different yarn. Starter boxes and cheese tables are set up individually for each bay. The only limitation is that the extremes of different counts on the machine at any one time must fall within the range of the knotter in the traveler. Changes can, of course, be readily made at any time, and any number of bays can be run on identical yarns. (Note the dividers between the bobbin trays on the machine shown above.) *Full details on the many adaptations of this versatile machine can be obtained from your Barber-Colman representative.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

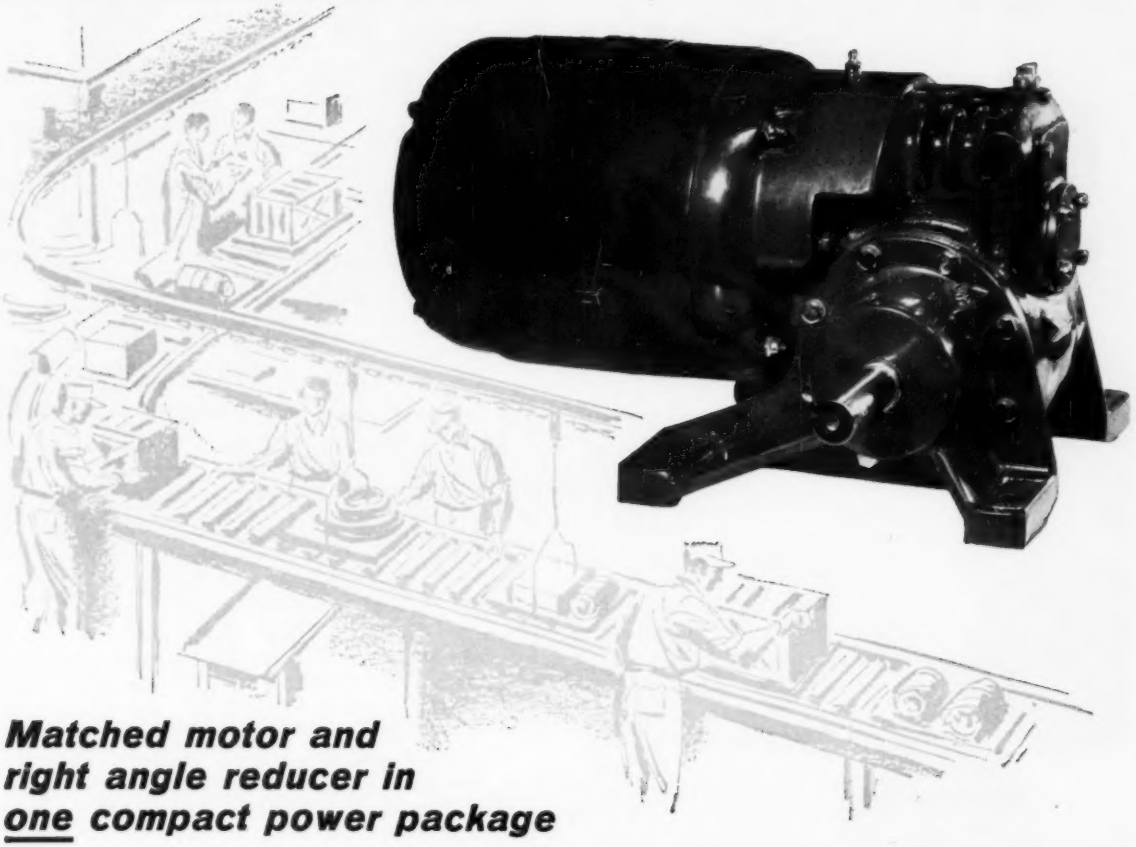
ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. | GREENVILLE, S. C., U.S.A. | MANCHESTER, ENGLAND | MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. "COMASA" R. Glicerio, 537/547 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-Machi, 3-Chome, Higashi-Ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 730, Muhammadi House, McLeod Road Karachi 2, Pakistan

MASTER GEARMOTORS

simplify applications—save space



Matched motor and right angle reducer in one compact power package

Reduction of engineering and assembly cost . . . elimination of separate components . . . are basic in this Master Right Angle Gearmotor. Consider these specific advantages:

1. No high speed coupling.
2. No V-belts or chains and sprockets.
3. Takes up less space—reduces mounting plates.
4. Special flange or face mounting can eliminate low speed coupling.
5. Saves aisle space . . . drives around the corner.
6. Wide acceptance by machine builder and user.

Master Gearmotors are built with ratings from ⅛ to 125 h.p. . . . in right angle, parallel or in combination. Right angle ratios are available to 96:1; parallel 120:1.

Electrical and mechanical modifications give you a maximum choice—vertical, horizontal, and flange mountings; output shaft over, under, left or right. These gearmotors can be supplied with built-in accessories: a fluid coupling for hard-to-start loads or cycling loads; a brake for fast stops and positive holding.

Call your nearest Reliance Sales Engineer. Let him tell you why more Master Gearmotors are in use today than any other make. E-1643

Product of the combined resources of Reliance Electric and Engineering Company and its Master and Reeves Divisions

RELIANCE ELECTRIC AND ENGINEERING CO.

DEPT. 201A, CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities

Duty Master A-c. Motors, Master Gearmotors, Reeves Drives, V★S Drives, Super 'T' D-c. Motors, Generators, Controls and Engineered Drive Systems.

SODIUM HYDROSULFITE CONCENTRATED
TC HYDRO

TC TENNESSEE CORPORATION

HYDRO

SODIUM HYDROSULFITE

CONCENTRATED

HIGHEST QUALITY

FAST DELIVERY SERVICE

DEPENDABLE SUPPLY

TC-Hydro is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free, assuring highest stability and uniformity.

When You Need it— Our production is located in the heart of the Southern Textile Industry which permits us to render over-night delivery service to most Southern points—also small lot shipments are available from centrally located warehouses.

Phone, Wire or Write for literature and test samples if desired.

TC TENNESSEE CORPORATION

TENNESSEE CORPORATION

615-629 GRANT BUILDING, ATLANTA 3, GEORGIA

New M & W Two-Piece Roller Type tenter clip greatly reduces costly down time . . .

AS SHOWN, a single socket-head cap screw and lock washer rigidly hold the two sections of this new clip together. Accurate machining also locks the two parts together and prevents any movement between them.

In case of damage or wear, the top section can promptly be removed and replaced, leaving the bottom of the chain in place on the frame—and operation can be resumed immediately.

- ★ Savings on down time are exceptional.
- ★ All parts are easily accessible and removable parts are interchangeable.
- ★ No expensive rivets to knock out and replace.
- ★ If whole chain needs repair, this clip speeds up removal—reduces repair cost.

Get all advantages we have built into No. 11 Roller Type Tenter Clip since 1940—*plus* this unequalled new two-piece convenience and economy.

"There are no weak links in an M & W Tenter Clip Chain"

ATMA Parade of Progress

Send for complete data . . . no obligation

MARSHALL and WILLIAMS CORPORATION

PROVIDENCE, R. I. GREENVILLE, S. C.

Canadian Representative:

RUDEL MACHINERY COMPANY LIMITED

Main Office: MONTREAL, QUEBEC.

NO WICKS MEAN CLEANER PRODUCTS· FASTER PRODUCTION· LESS MAINTENANCE

OIL IS SUPPLIED TO BOTH TOP AND CONICAL BEARING SURFACES THROUGH SEAMS.
LESS OIL IS NEEDED.
TRAVELER DISTRIBUTES OIL.
Oil flows to the annular reservoir within the ring, then is drawn by capillary action through seams to the bearing surfaces.

It's the New HERR "M" TYPE Conical Ring

The best equipped textile mills in the United States have been gaining experience with Herr "M" type Conical Rings and have reported wonderful success during the past four years. They report a definite control of lubrication far superior to any wick lubricated ring. They have achieved a reduction in oil, a saving in maintenance, an increase in spindle speed, a reduction in yarn breakage, and have produced a much cleaner yarn.

The new "M" ring makes use of a different principle of carrying the oil to the bearing surfaces of the ring where it is needed. It is called capillarity and, because the distribution is so complete, less oil is required.

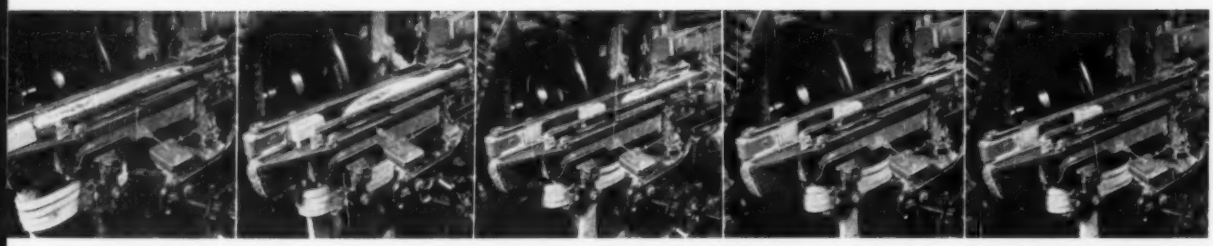
Phone us today — order enough "M" Rings to convert a machine. You will be pleased with the results of your test.

The 5" diameter $4\frac{3}{64}$" face Herr Conical Ring requires only one oil cup.

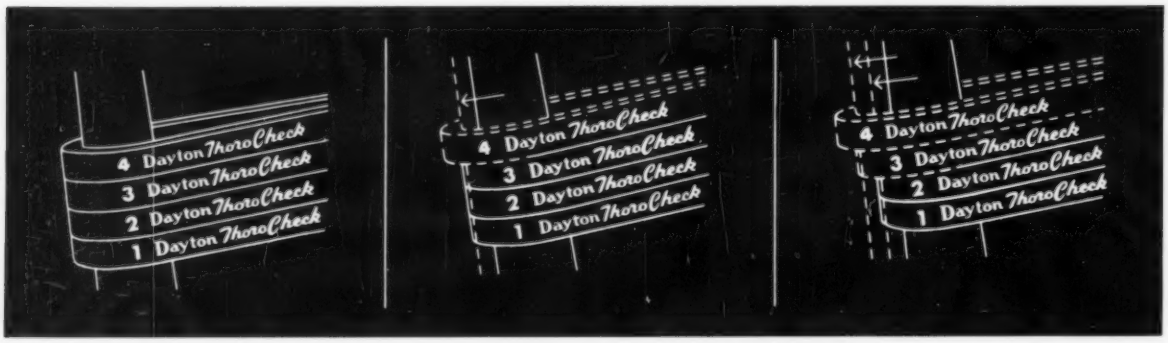
HERR MANUFACTURING CO., INC.

310 FRANKLIN STREET, BUFFALO 2, NEW YORK

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

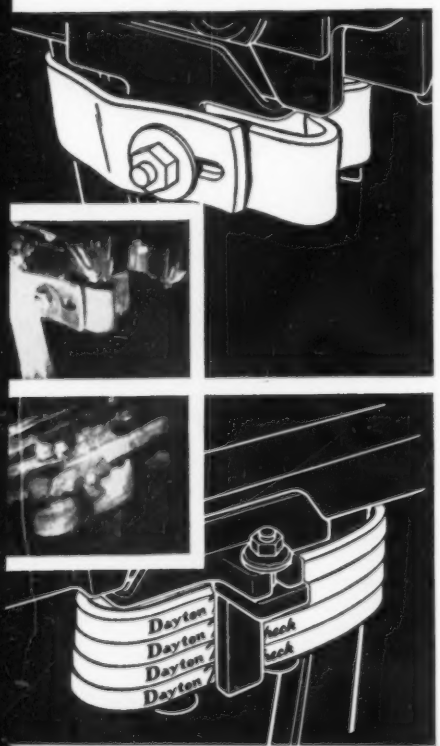


MILLIONS OF EXPLOSIVE BLOWS yet the Dayton Thorobred Loop Picker stays good as new on both regular and high speed looms. The angle of the picker face is faultless, without the slightest strain on the shuttle. Dayton's precision-smooth molding of fabric and rubber prevents lint pick-up and hanging filling. It's easy to parallel Dayton's Loop Picker accurately on the stick without tearing the lug ply, thanks to the special flared bottom at the tapered hole.



DAYTON ENDLESS THOROCHECK STRAPS OUTWEAR all others 3 to 1—save up to 50% in strap costs at leading mills. Why? Because there's less break-down. Dayton ThoroCheck Straps are for safe, *graduated* checking and keep picker in contact for perfect boxing. ThoroChecks help you step up production and cut downtime.

NO BUGGY WHIP ACTION of ordinary open-end check straps with Dayton ThoroChecks, as the stroboscopic camera shows. That's one of the reasons for the longer production life and the high speed performance of Dayton ThoroChecks.



GUARD 3 WAYS AGAINST LOOM DOWNTIME

Dayton's Thorobred 3 protects heaviest shock and wear points

When you add up the cost of downtime, labor, maintenance and inefficient production, you find that the day-in, day-out dependability of Dayton's Thorobred Loop Picker, Check Straps and Lug Straps on your loom make important dollar-sense. With less shock and wear and less downtime. Thorobred-protected weaving is a real money-making combination.

Ask your Dayco Representative to set up a test. Phone or write the Dayton Rubber Co., Textile Division, 401 South Carolina National Bank Bldg., Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving.

OVERSEAS PLANT: THE DAYTON RUBBER CO., LTD., DUNDEE, SCOTLAND

SMOOTH AS HYDRAULIC ACTION, Dayton Thorobred Deluxe Lug Straps cushion shock to lengthen loom life. They absorb firmly, gently, the hammer-hammer-hammer of the pickerstick thrust that wears out ordinary lug straps. The reason for this extra protection is the Thorobred one-piece construction, reinforced with Dayton's patented cable-cord design for shock-immune strength—double that of all others. No rivets, no easy-to-loosen parts. Dayton Thorobred Deluxe Lug Straps are molded around a plug built right in the strap loop.

Major Mill makes Record-Breaking Economy Run

Running a high-speed test over 14 months at 182 picks a minute, a major mill added up 70,200,000 impacts without sign of wear or need of adjustment of Dayton ThoroCheck Straps. Lower maintenance, reduced downtime ran up a 25% savings, and increased production of this mill and many others.

The special factor in the Dayton ThoroChecks is the smoother, "graduated" checking action, eliminating drag over the stick, allowing efficient functioning at highest speed.

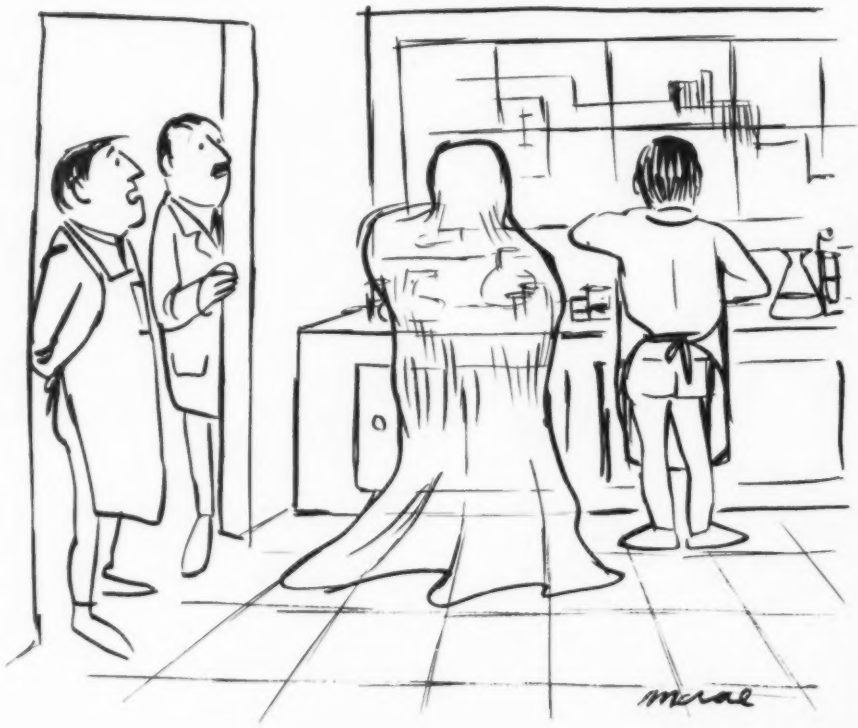
Your loom's out of business when the old-fashioned single solid strap breaks. But never with Dayton ThoroChecks.

Here's triple and quadruple insurance to keep your looms in production. When one's worn, the other Dayton ThoroChecks keep your loom going. Only when the loom is down for some other purpose, need a new ThoroCheck be installed. ThoroChecks also save on downtime after the week-end shutdown. Uneffected by temperature and humidity changes, ThoroChecks are ready to go at start-up time without tedious readjustment.

These mills not only tested the ThoroChecks but installed Dayton's Thorobred Lug Straps—a soundly designed unit to cut down wear throughout the loom. The built-in cushion accounts for the shock-proof feature absorbing fast starts and stops. And Dayton's patented cable and reinforcement doubles its shock-strength over all the others.

Economy records are also possible with Dayton's remarkable specially designed loop picker. It takes all the pounding and punishment of the new and heavier shuttles and higher speeds, yet outlasts other pickers 2 to 1 (and these new-type shuttles are 2½ times heavier than the conventional dogwood). Dayton designers point out that the slight-tilt construction provides perfect shuttle contact and the rounded front edges stop hanging filling, the narrow back eliminates wear on the lay-in strap. This triple economy combination of Dayton Rubber is thus far unmatched in its field.

Si



". . . . never saw such enthusiasm. Si always works with a spirit. . . ."

Si must be working on one of those wet-processing technical problems that you sent us.

When you do send a problem, not only does Si work with a spirit, but all of those around him join in the work with the same spirit.

What is your current problem?

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

Sunlit yellows

. . . fast, economical and direct dyed!

Designed for America at play

by *Melba Hobson*

of Mr. Gee Sportswear

Here's a versatile range of bright yellows to meet a variety of dyeing and printing requirements.

All produce very good light fastness . . . especially in pastels . . . and better-than-average wash fastness by the direct process or with a simple aftertreatment.

These outstanding dyes are American-made and strictly standardized for dependably consistent results.

Our nearest office will supply bulletins, samples and suggested formulations to match your shades.

ERIEFORM YELLOW GR
ERIE FAST YELLOW WB
SOLANTINE YELLOW FF Conc
SOLANTINE YELLOW RL

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

Atlanta Boston Charlotte Chicago Greensboro Los Angeles
Philadelphia Portland, Ore. Providence San Francisco

In Canada: ALLIED CHEMICAL CANADA, LTD., 100 North Queen St., Toronto 18

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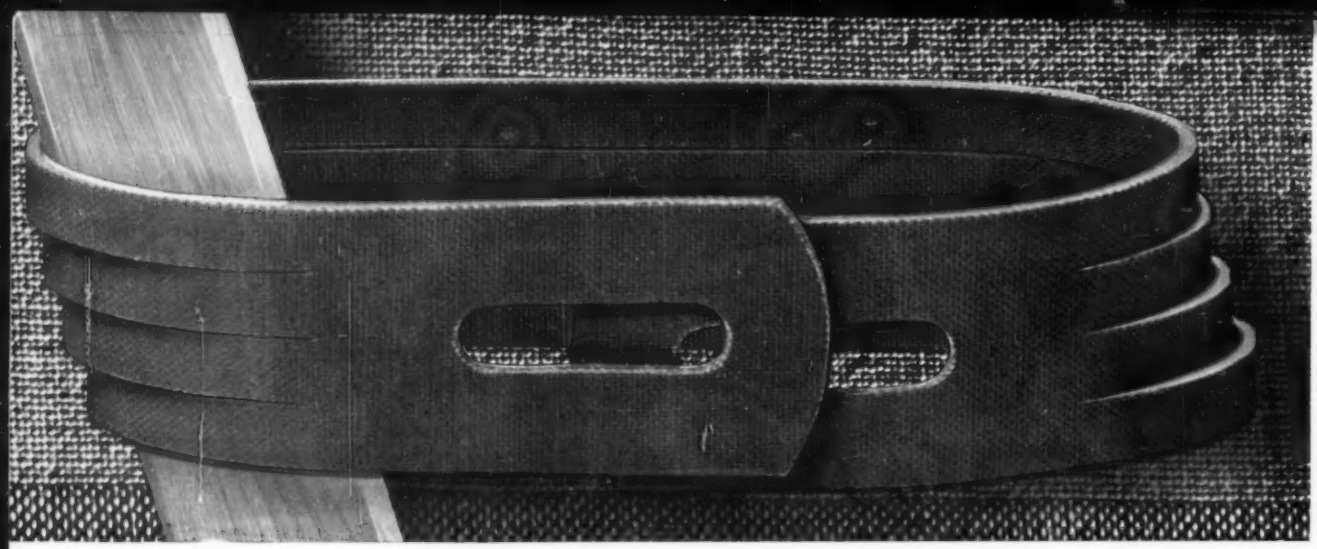
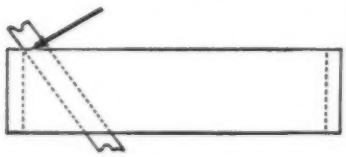
Allied Chemical

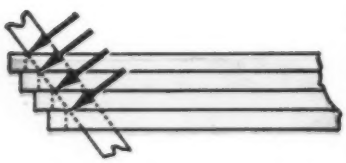


Gates 4-in-One Check Strap LASTS up to 3 TIMES LONGER

New Checking Principle is Secret of Longer Wear—



With the ordinary one-piece check strap, all shock and wear from the picker stick are concentrated at one point.



Gates 4-in-1 Check Strap is built with four separate bands. As the checking action begins, a portion of the picker stick force is absorbed by the top band—then in turn, the second, third and fourth bands each absorb a portion of the shock, providing a checking action that is smooth and even. Wear is distributed evenly over the entire width of the strap, increasing service life up to 3 times.

You Get These Important Benefits:

Unaffected by Changes in Humidity—no stretch or contraction—ready to go Monday mornings without time-consuming adjustments.

Stronger and Tougher than Leather—yet flexible and light in weight.

Absorbs Shock of Picker Stick—resilient and flexible—conforms to any action of the picker stick, absorbing blows and shocks.

Saves Installation Time—quickly installed and adjusted without removing picker sticks. No new brackets needed.

Competitive Price—even though Gates 4-in-1 Check Strap has many important advantages over ordinary straps, it is competitively priced. For faster, more economical production, equip your looms with *all* Gates *specially engineered* accessories . . . available from Gates Textile Distributors.

Gates Distributors are in the Yellow Pages

Gates

The Gates Rubber Company, Denver, Colorado

The Mark of *Specialized* Research

IPA-900

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Reversible Pickers

Tex-Hide Harness Straps

Tex-Hide and Vulco Loop Pickers

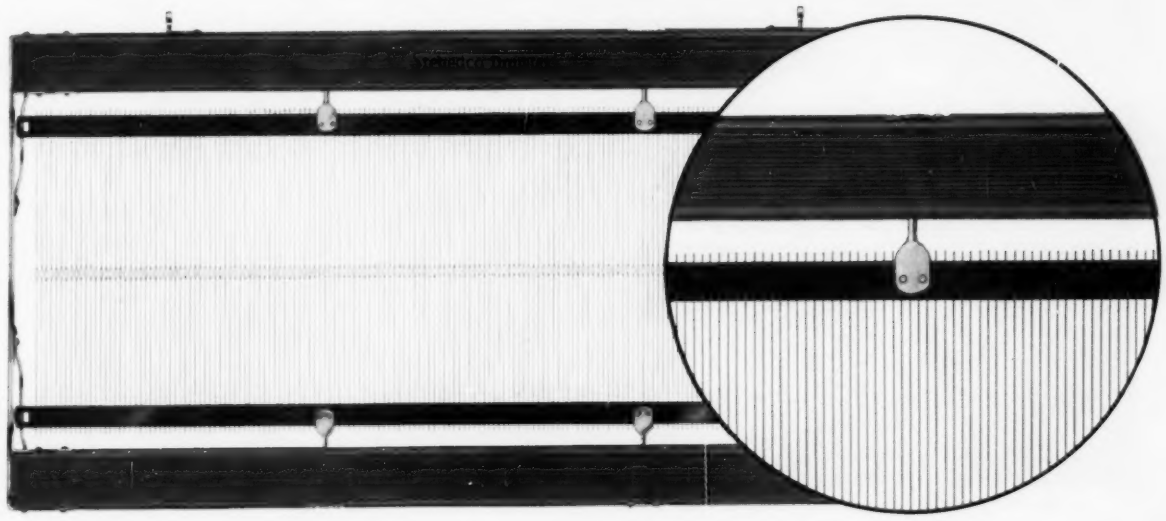
Thin Tex, Vulco, Tex-Hide & Super Tex-Hide Lug Straps

Gates Textile Accessories

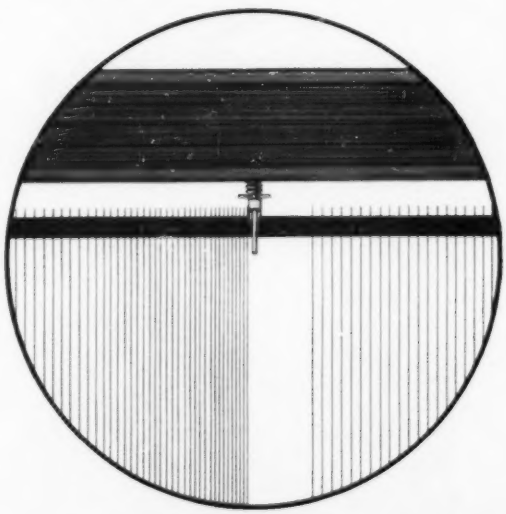
Stehedco

DRAWTEX HARNESS

IMPROVES EFFICIENCY AND QUALITY WITH PERFECT HEDDLE SPACING



Are your weavers and fixers handicapped by bunching of heddles at rod supports, as illustrated below?



Stehedco Drawtex rod supports allow completely free movement of the heddles. There is no obstruction to keep the heddles from finding their natural position on the rod. Therefore, warp streaks from heddle bunching are completely eliminated and down time to correct this condition is a thing of the past.

This is only one of many Stehedco Drawtex advantages. Ask our sales engineers to tell you all about them.

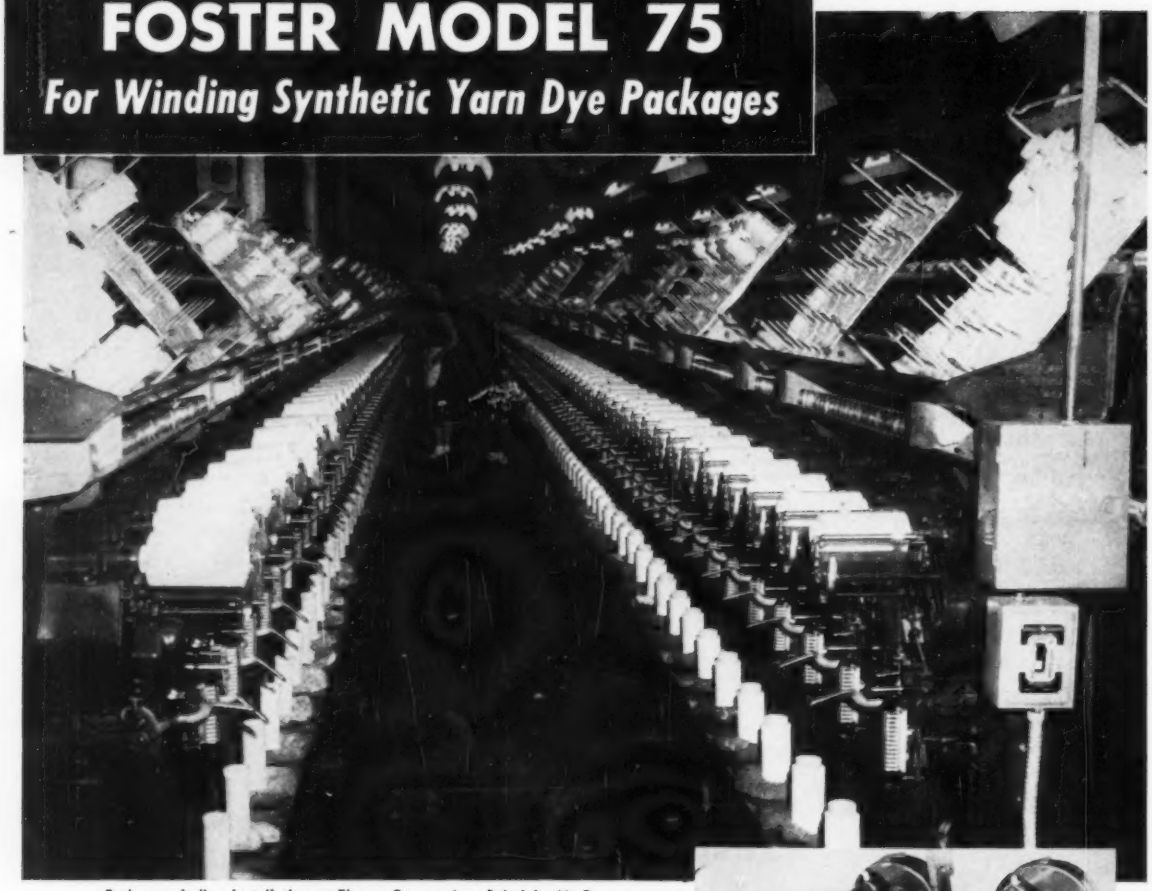
Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

F-5816

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N. C.
Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

FOSTER MODEL 75

For Winding Synthetic Yarn Dye Packages

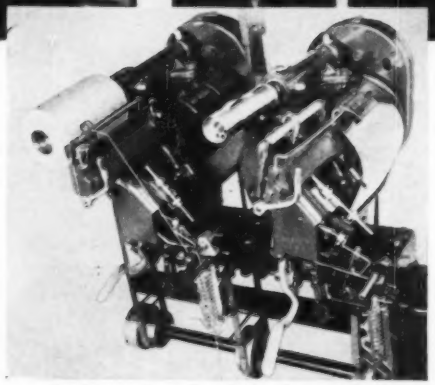


Package winding installation at Elmore Corporation, Spindale, N. C.

2 FEATURES THAT PROMOTE BETTER DYEING

One feature is the special attachment which accurately controls the density of the package, thus permitting extra softness. This extra softness compensates for the tendency of the yarn to pack and swell when wet and permits ready penetration of the dye liquor.

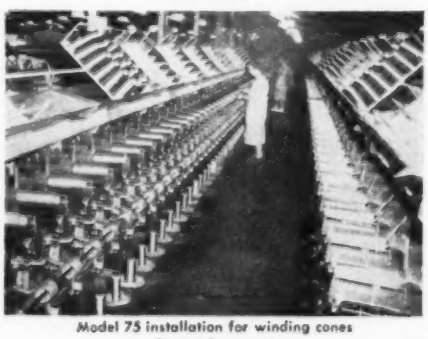
The other feature is the open or honeycomb winding pattern, instead of a diamond pattern. This again promotes free circulation and thorough penetration by the dye liquor.



Special attachment for winding dye packages on Model 75.

OTHER ADVANTAGES

The Foster Model 75 has other basic advantages which make for maximum utility and high production at low cost, such as:—convertibility for cone winding, ball bearings, non-wear spindle drive, yarn oiling attachment (optional), gear gainer attachment, relatively high winding speed (up to 1500 r.p.m.) and 180° belt contact on each spindle.



Model 75 installation for winding cones at Elmore Corporation.

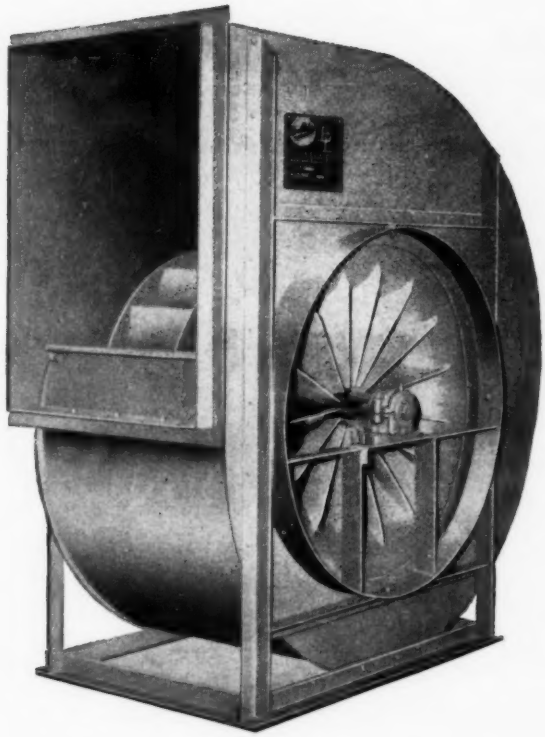
636-8

AMA
American Textile Machinery Exhibition - International
Parade of Progress

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.

Southern Office, Johnston Bldg., Charlotte, N. C. • Canadian Representative—Ross Whitehead and Co., Ltd., 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario • European Representative—Muschamp Textile Machinery (Sales) Limited, Eider Works, Wellington Road, Ashton under Lyne, Lancashire, England.



"Buffalo" Type "BL" Fan For Supplying Ventilating, Air Conditioning & Air Cleaning Systems.

MAXIMUM AIR MOVING EFFICIENCY WITH MINIMUM MAINTENANCE

Quiet, efficient, economical operation of the "Buffalo" Type "BL" Fan in general air moving service is assured by these superior "Buffalo" engineering features:

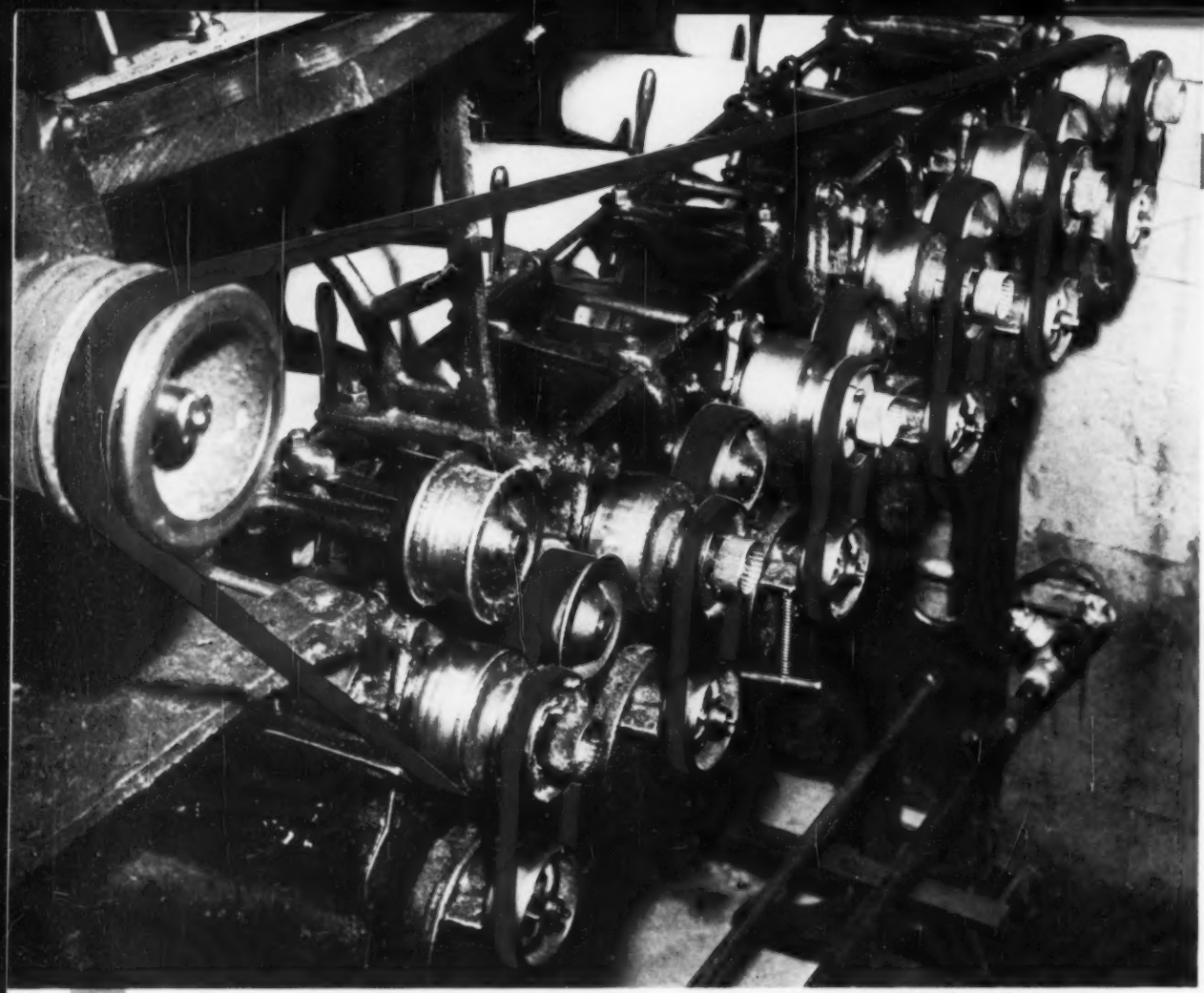
- The smoothly-curved true half circle inlet bell holds turbulence to a minimum. Fixed directional guide vanes are standard; variable inlet vanes are optional.
- Streamlined wheel with backward curved blades attains peak efficiency. All wheels are factory tested and balanced to minimize vibration.
- Smoothest possible air flow is enhanced by the correctly shaped scroll of the wheel-contoured housing.
- "Buffalo" designed non-overloading factor provides stable, quiet output from free delivery to shutoff.
- Rugged "Buffalo" construction (extra-heavy at points of greatest strain and wear) insures unsurpassed dependability and long, maintenance-free life. This, in turn, results in the absolute minimum maintenance time for which all "Buffalo" products are noted.

Be sure to investigate the "Buffalo" Type "BL" Fan for your Class I and II air moving jobs. Call your nearby "Buffalo" engineering representative, or write for Bulletin F-104.

"Buffalo" Fans bring you the famous "Q" Factor — the built-in QUALITY that provides trouble-free satisfaction and long life.

BUFFALO FORGE COMPANY
Buffalo, N. Y.
Buffalo Pumps Division, Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING • AIR CLEANING • AIR TEMPERING • INDUCED DRAFT • EXHAUSTING • FORCED DRAFT • COOLING • HEATING • PRESSURE BLOWING



Constant spindle speed improves winding. Oil from spindles will not cause EXTREMULTUS to slip.

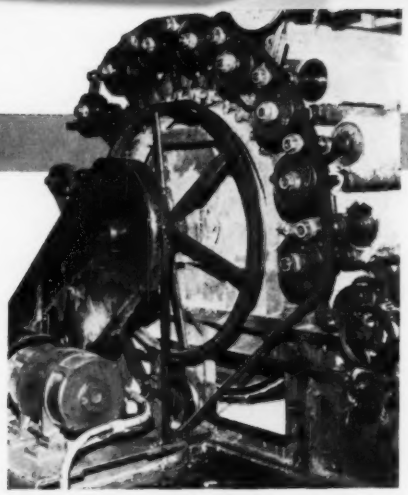
for increased textile mill efficiency

EXTREMULTUS

THE BELT THAT WON'T

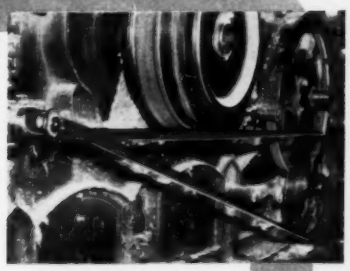
EXTREMULTUS is not merely a new name. It is a new kind of belt. It combines a polymer core — for strength and elasticity — with chrome tanned leather for high friction and flexibility. It is unique; it has never been successfully imitated.

EXTREMULTUS belts have been job-proven in hundreds of textile mills and in many other industries. Mills that have tried it are now converting to EXTREMULTUS 100%.



Woolen card stripper drive shows less down-time and more control of web because EXTREMULTUS has not stretched or slipped since installed . . . even with small arc of contact

On loom drives EXTREMULTUS eliminates slip on start and stop, at higher ratios and shorter center distances. Ratios easily changed. Always a soft, positive start.



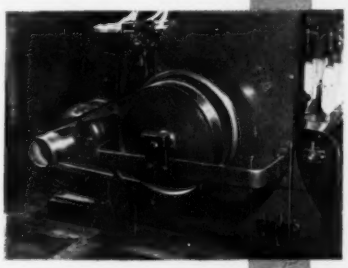
With EXTREMULTUS you can use smaller doffer pulleys—increase lrckerin speeds without jack shafting.

NO-SLIP EXTREMULTUS MEANS MAXIMUM OUTPUT

ELIMINATES START-UP PROBLEMS. Won't stretch . . won't stiffen around pulleys. No Monday-morning start-up problems . . . instant power transmission, more output per shift.

KEEPS TENSION. No need for belt take-up. EXTREMULTUS polymer core is elastic, flexible . . . with NO PERMANENT STRETCH.

GIVES SMOOTH, CONSTANT SPEED. At high or low speeds . . . under the most severe conditions . . . EXTREMULTUS won't slap or chatter. Gives smooth, controlled power to improve every machine's performance.



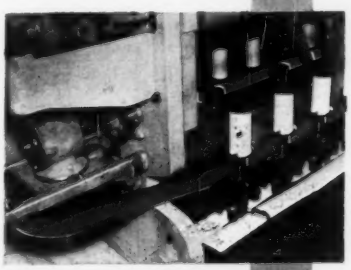
Roving frame super drafts with EXTREMULTUS belts have maintained required high speed without maintenance on every check since their installation.

NO-STRETCH EXTREMULTUS ELIMINATES BELT TAKE-UPS

OUTLASTS ALL OTHER BELTING. In every installation ever made, EXTREMULTUS has so far surpassed the operating life of the belting it replaced that mill personnel find it hard to believe their own records. EXTREMULTUS has been running without adjustment for years.

REDUCES BEARING LOADS. Through its high coefficient of friction and unusual elasticity, EXTREMULTUS reduces bearing loads . . . resulting in less down-time and better production.

SPLICES QUICKLY. You can make smooth, flexible, permanent splices in your own shop. The splice is as strong as the belt itself. Fasteners are not necessary.



On twisters and spinning frames EXTREMULTUS maintains constant spindle speeds.

STRETCH...WON'T SLIP

EXTREMULTUS,
INCORPORATED
25-11 40th AVENUE
LONG ISLAND CITY 1, N. Y.

To find out how EXTREMULTUS keeps tension, eliminates start-up problems, outlasts all other belting, gives smooth, constant speed, reduces bearing loads, splices quickly . . . contact your local distributor.

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BRUCKMANN AND CO.
Mobile, Alabama
CENTRAL BELTING, HOSE AND RUBBER CO.
Richmond 20, Virginia
DILLON SUPPLY CO.
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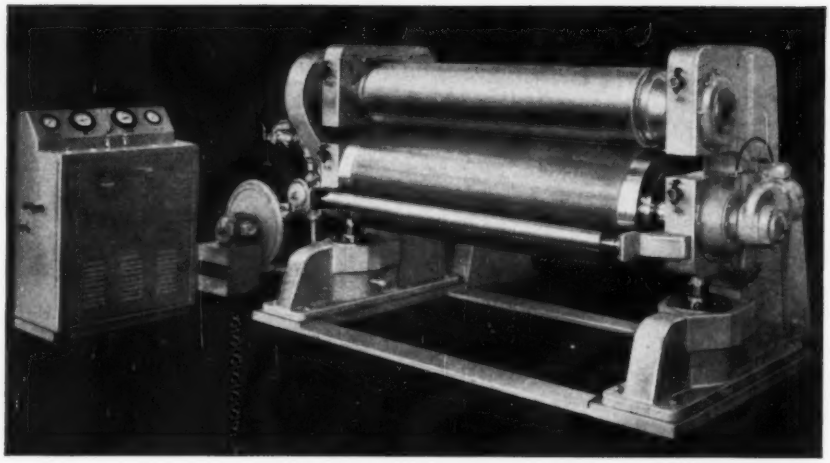
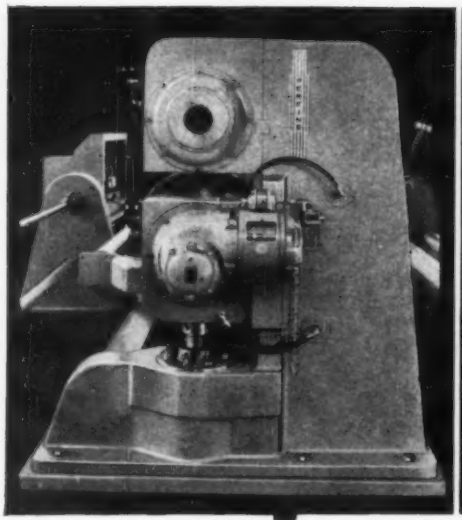
Charlotte, North Carolina

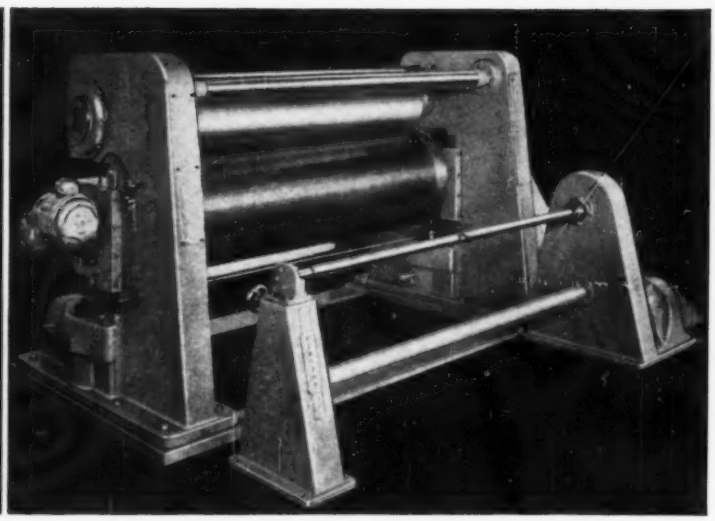
Distributors in all other major cities

A New Distinction for the Textile Industry



"PERKINS" newly designed, heavy-duty Two-Roll TRICOT SCHREINER CALENDER

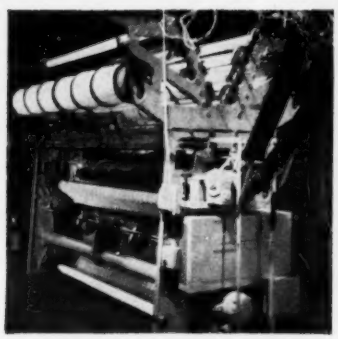




Constructed of heavy fabricated steel frames for rigid support of calender roll bearings, especially built for textile mills demanding a machine for utmost performance in producing the best in finishes on fabrics of exclusive quality.

B. F. PERKINS & SON, INC.

HOLYOKE, MASSACHUSETTS



There's no limit to the lace patterns with the NEW KIDDE 24 BAR RASCHEL KNITTER

Look at the lace in the picture. Every one of those intricate and varied patterns can be made on a single machine . . . Kidde's new 24 bar knitter. Look again at the quality of the lace . . . at the fine detail and the clear outlining of the pattern. That's quality lace turned out at moderate cost.

This new addition to Kidde's line of Raschel knitters is built to operate with 24 bars . . . but can be used with 14 or 18 for less intricate patterns. It turns the lace out fast, too . . . up to 300 courses per minute.

Like all Kidde machines, the new 24 bar knitter is simple, accessible and easy to work on. Equally important, it is ruggedly built to withstand round-the-clock, high speed operation. Write to Kidde for full information.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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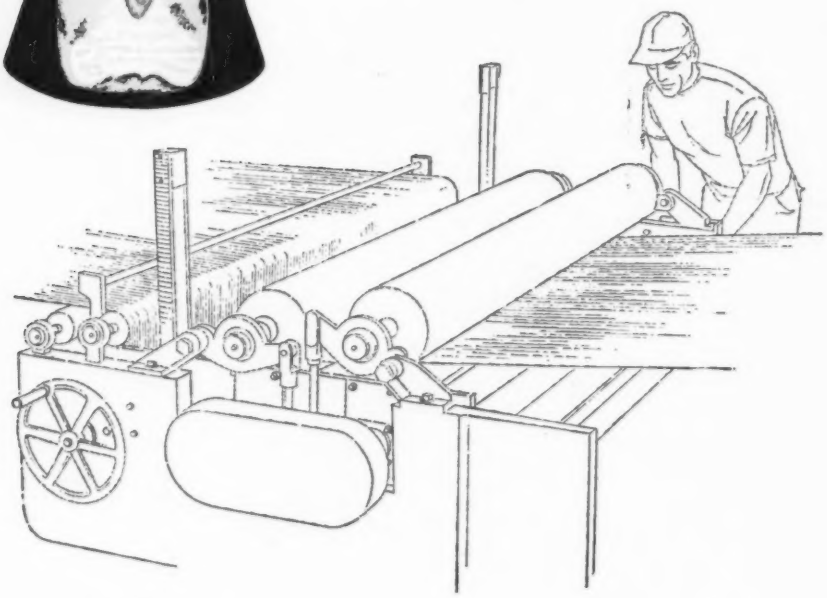
FROM A KERNEL OF CORN THROUGH CHEMISTRY



Kofilm

ACETYLATED STARCH DERIVATIVE

NEW STANDARD FOR SIZING

There's been a change. In warp sizing results. They're now much more uniform. Because KOFILM, a unique acetylated starch, eliminates variations in viscosity and strength. As proved in mill after mill in little more than a year.

KOFILM prolongs viscosity stability over extended periods of time. Eliminates lumping and congealing. It forms exceptional films. High in strength. Extremely flexible. Very tough. Reduces stoppages. Helps produce more uniform yarn.

KOFILM is quick and simple to prepare. It is available in a complete range of viscosities for all constructions and blends. It is also recommended for wash 'n wear finishes. Why not compare it with whatever starch product you're now using? Write for a sample and data, telling something of the use you have in mind.

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STARCH and CHEMICAL
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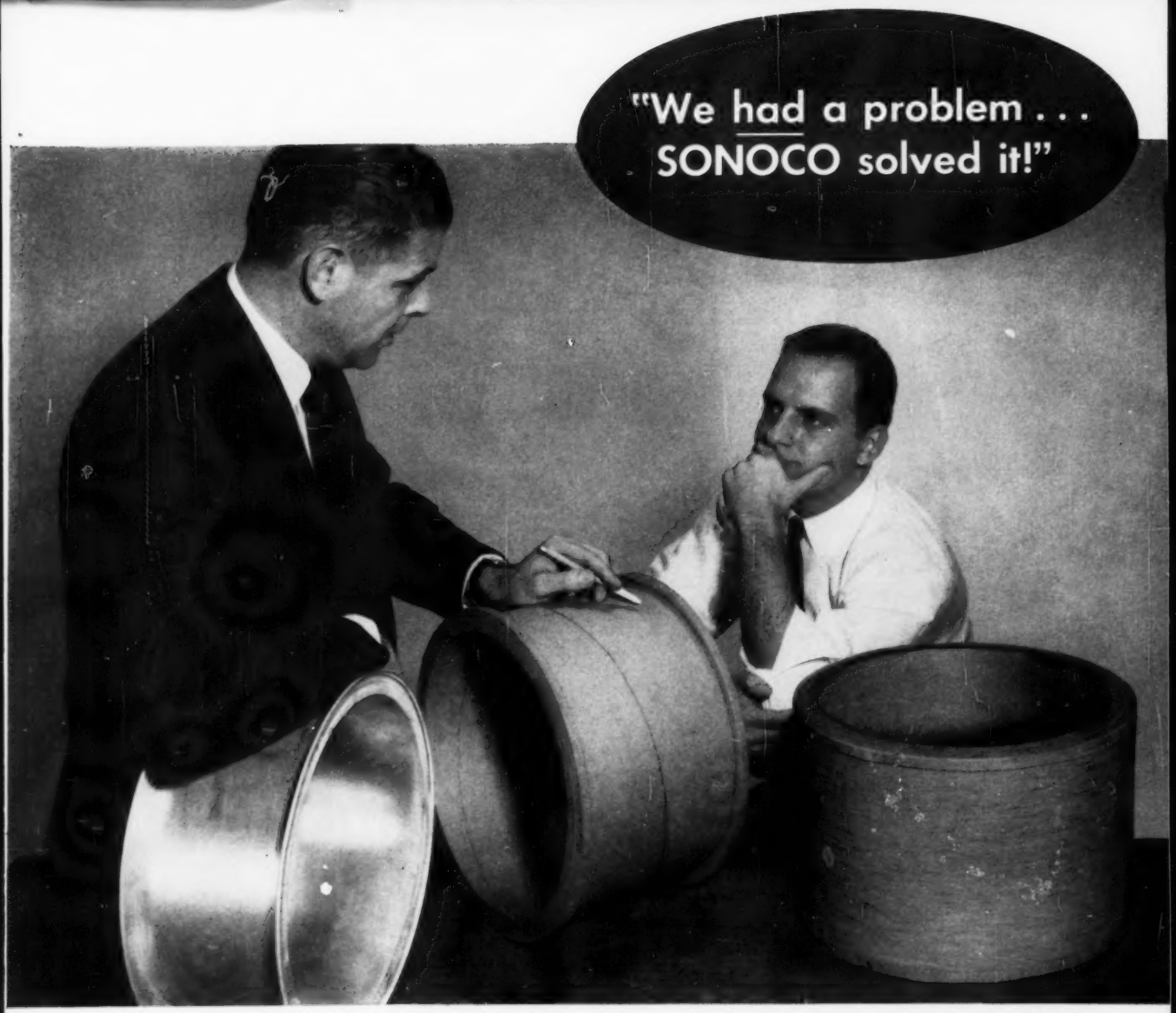


Drum filled with Ashaway's Lifeline of Dacron* polyester fiber

THE NEED: Economical storage drums for fishing lines

The manufacturer was encountering problems with metal drums being used for storing fishing lines. First, production required a large inventory of these expensive drums. And second, maintenance of the drums was both time-consuming and costly.

The solution to these problems was in an area where SONOCO experience in fibre products could be utilized to full advantage.

A new type drum was developed. It resisted the line's constrictive force! Its exceptional strength and durability permitted the drum to be used time and time again! The per-unit cost was *less than one-fourth* of the carrier it replaced! And, as a result, the manufacturer was able to drastically reduce his investment in storage drums.

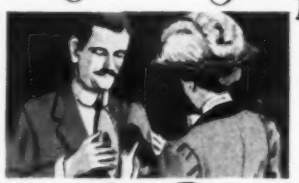
Only SONOCO with 60 years' experience, plus modern research and completely integrated manufacturing facilities, could solve these problems quickly with a dependable, low cost fibre product. It is typical of countless cases where SONOCO technical and production "know-how" has benefited the industry. *Let* SONOCO *experience help you!*

**DuPont trademark*

SONOCO
Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office—Hartsville, S. C. • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Fremont, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.



1910

- **One type of rayon**
- **Two end products**

Back in the Nickelodeon Era rayon was rayon. It was produced in only one strength, one denier, one elongation. This early rayon was limited to use only in ribbon and hats.

1960

- **109 types of rayon**
- **Hundreds of end products**

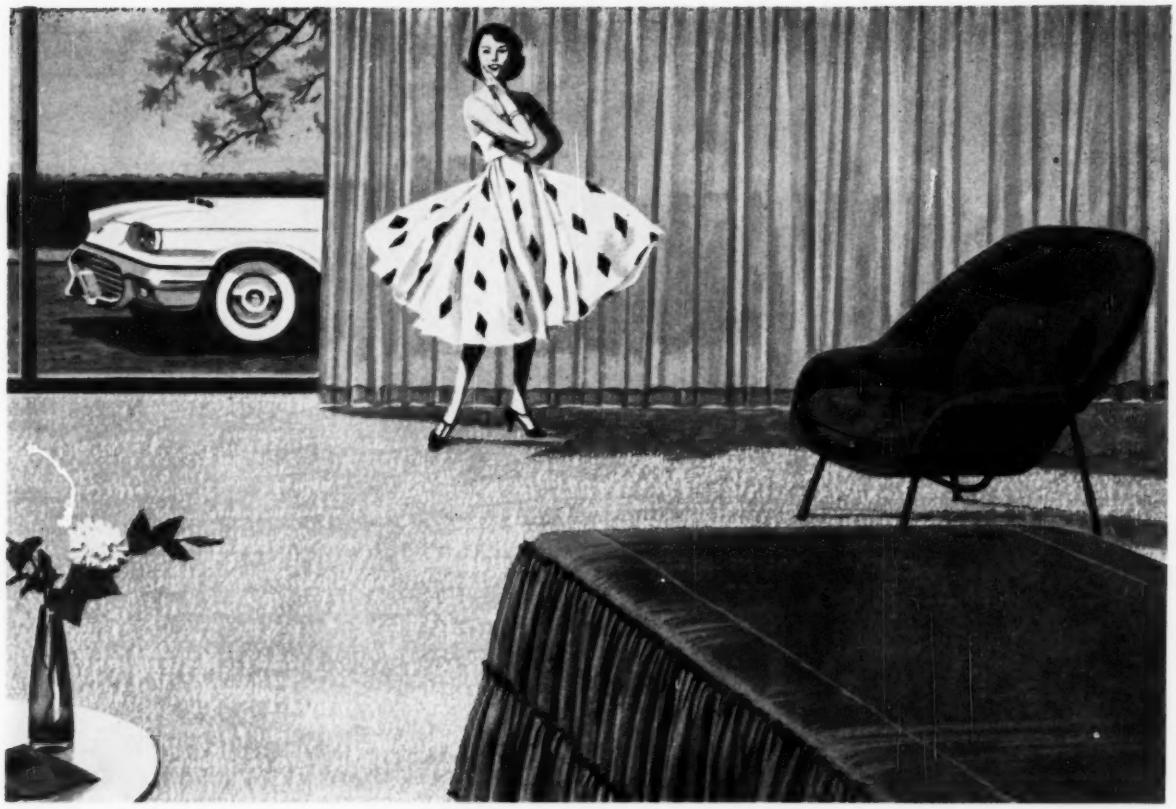
Today wonderful new Avisco rayons go into all the products illustrated at right . . . and many more! And this is just the beginning. Spectacular new developments are near at hand!

AVISCO® RAYON . . .

Yes, in 1960 rayon is a far cry from the limited product of the early nineteen hundreds. In fact, rayon now represents a huge family of radically different fibers and filament yarns. Each member of this growing family is individually engineered for specific physical properties, mill operations and end uses. American Viscose was and continues to be the leader in gearing rayon to fit the needs of the day . . . and developing highly advanced fibers and filament yarns for the future.

YOU NAME IT! If it's rayon...American Viscose has it!

Every type of rayon staple and filament known can be made by American Viscose . . . the *only* producer you can use as a source for *all* your rayon requirements. And remember, Avisco people have the technical know-how to make virtually any type of fiber or filament a mill wants, with tailor-made packages for specific needs. You name it . . . if anyone can produce it, American Viscose technicians can!



a growing family of engineered fibers

Why do leading mills use AVISCO RAYON as the STANDARD OF CONTROL? Because statistical controls in manufacturing insure peak runability in all textile operations.

TECHNICAL SERVICE! Avisco Technical and Textile Service Department is the first and most highly respected rayon technical service in America. Experienced service engineers have at their fingertips full size operating mill machinery to give you advanced technical data and on-the-spot mill assistance. Always ready to serve you . . . as near as your telephone.

AVISCO

Look to **AVISCO**® for new ideas!

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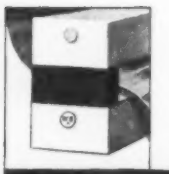


...GATEWAY TO SAFETY FROM TRAMP METAL

ANOTHER WAY RCA SERVES INDUSTRY THROUGH ELECTRONICS

Take the "heat" off your picker room ...with an RCA Metal Detector!

Even if tramp metal has not yet touched off a real conflagration in your picker room, chances are there are countless "heated discussions" over costly damage to moving parts of machinery caused by these stray metal pieces.

Nails, wires, and other pieces of tramp metal, packed tightly into high density bales, for example, are insulated against magnets so that ordinary protection devices are of little value. By contrast, the RCA Electronic Metal Detector shows up even minute metal pieces—magnetic or non-magnetic—before they can get into other equipment to cause trouble. Yearly savings may run into thousands and product quality is protected.

The RCA Metal Detector can be used on material traveling at speeds from 15 to 1000 ft. per minute, and to be detected the metal need only be as small as the dot over this letter "i". You can install it around a non-metallic conveyor that automatically stops when tramp metal is detected; or it can be arranged to light a lamp or sound an alarm when trouble threatens. The RCA Metal Detector pays for itself quickly in longer life of costly machinery, decreased downtime and savings in product.

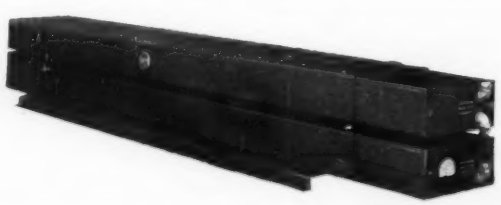
To find out more about the RCA Electronic Metal Detector, write to RCA, Dept. C-271, Building 15-1 today.

Tmk(s) ®

RADIO CORPORATION of AMERICA

CAMDEN, N. J.

In Canada: RCA VICTOR Company Limited, Montreal



RCA ELECTRONIC METAL DETECTOR

Prepare any fiber, any fabric, for practically anything with

TRITON

non-ionic surfactants

You name it—resin finishing, water repellency, dyeing, almost any process. Your results can be only as good as your preparation. And just as there's no substitute for good, thorough, complete and even preparation of fibers and fabrics, there's no substitute for TRITON surfactants and detergents.

In wool scouring, kier boiling of cotton, boil off of rayon and acetate fibers, desizing and scouring of piece goods, in dyebaths, and in other mill and finishing processes, TRITON surfactants have distinct advantages that set them apart from other products. They can be used with hard water, and in both acid and alkali, because they are non-ionic. High temperatures normally do not break them down. They hold soils in suspension; oils and greases are emulsified. And TRITON surfactants do not remain in fibers, but rinse out quickly and completely.

Write today for complete information on the Rohm & Haas TRITON line.

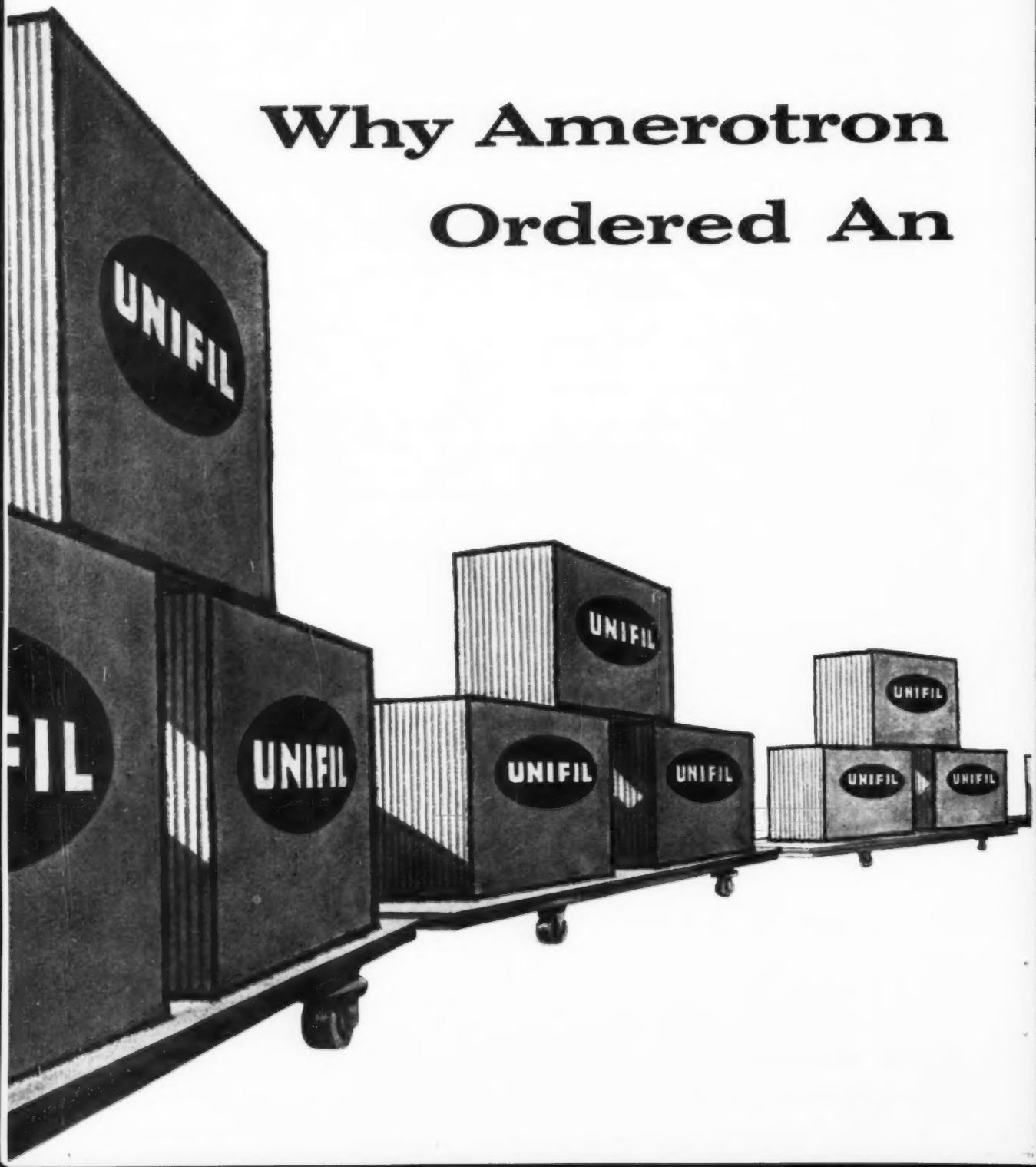
Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

TRITON is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

Why Amerotron Ordered An



There were three excellent reasons for Amerotron Company's recent reorder for 3200 UNIFIL® Loom Winders. Mr. Robert M. Cushman, Executive Vice President of this leading textile manufacturer sums them up: "UNIFIL Loom Winders already in operation in our plants have improved quality of some fabrics, and have enabled us to run more types of fabric. In addition, they made available more floor space."

It's a typical example. More and more modern weavers are evaluating, accepting, and reordering UNIFIL Loom Winders. They're depending on the advantages inherent in this advanced method of filling yarn preparation for the *extra* capabilities today's weave rooms need. UNIFIL Loom Winders efficiently and economically consolidate quilling and weaving at the loom... provide all the advantages of weaving-from-a-cone, on all types of yarn, both natural and synthetic. They greatly improve the quality of some fabrics and they give fabrics with textured yarn filling a uniformity not possible before. They're constantly opening profitable new markets for weavers everywhere.

Why not let a Leesona "Profit Factor Analysis" show you how UNIFIL Loom Winders can improve *your* weaving operations. For details on this informative survey, contact your Leesona Sales Engineer in Boston, Philadelphia, Charlotte, Atlanta, or Los Angeles. In Canada: Montreal or Hamilton. Or write LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island.

23.9.27

Additional 3,200...

Here are just a few of many modern mills which are saving with UNIFIL Loom Winders:

J. P. STEVENS & CO., INC.
PONEMAH MILLS
DRAYTON MILLS
JUDSON MILLS
UNITED MERCHANTS & MFRS., INC.
GLEN RAVEN SILK MILLS, INC.
BURLINGTON INDUSTRIES, INC.
EXPOSITION COTTON MILLS CO.
GREENWOOD MILLS
FRANK IX & SONS, INC.
MARION MFG. COMPANY
WILLIAM SKINNER & SONS
STRASBURG TEXTILE MILLS, INC.
AMEROTRON COMPANY
WOODSIDE MILLS
SPARTAN MILLS
RICHARD TEXTILES
CADILLAC TEXTILES, INC.
CANADIAN CELANESE, LTD.
CHRYSLER MILLS, INC.
CONSOLIDATED TEXTILES, LTD.
KALCO WEAVING CORP.
MARVEN LOOMS, INC.
PAXON FABRICS CORP.
PANSY WEAVING MILLS
PEPPERTON COTTON MILLS
RIVERSIDE MILLS
BERKSHIRE HATHAWAY, INC.
STANWOOD MILLS, INC.
STARR MILLS CORP.
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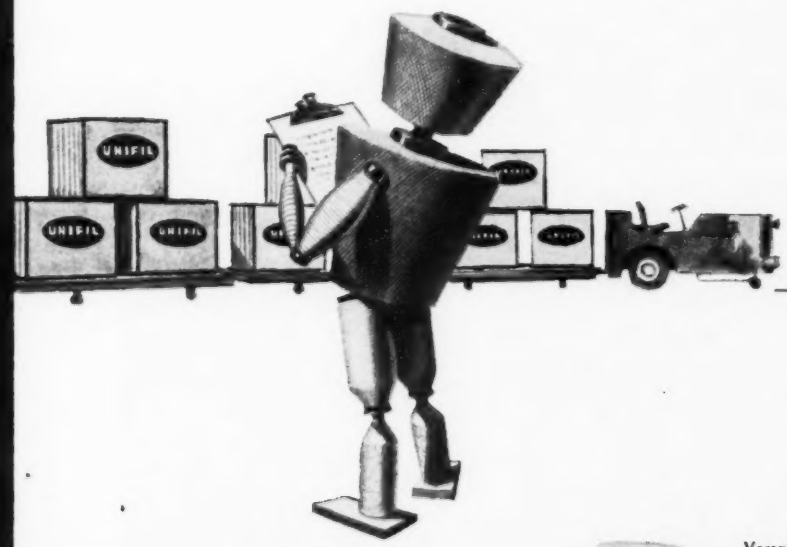
LEESONA



Versatility with
Any Filling Supply

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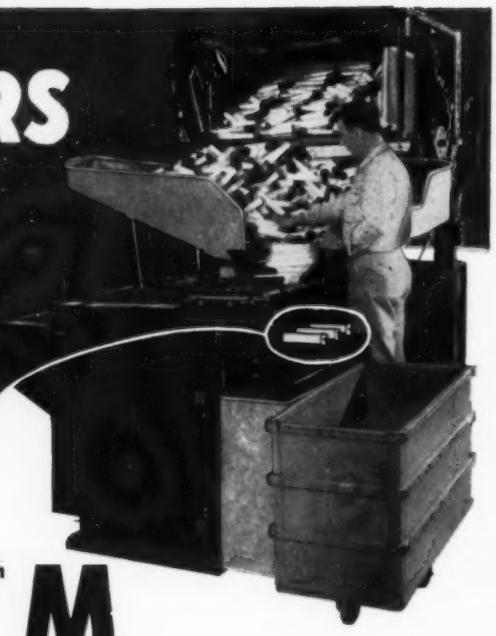
FREE SPINNERS

to operate more sides



with

TYPE **M**

ROVING BOBBIN CLEANING MACHINES

Relieve spinners of twisting off roving and assign them more sides for a quick return on investment — average six months. Absolutely no bobbin damage at the cleaning machine.

Let a Terrell engineer show you how this equipment can save you money.

THE TERRELL MACHINE CO., INC.

CHARLOTTE, N. C.

NEWS IN BRIEF

Government Probes Textiles. A full-scale study of the textile industry, from raw materials to finished products, is being launched by the Department of

Commerce. William H. Miernyk, textile economist who headed up the Pastore study, will direct the project. Purpose of the probe is to pinpoint causes of drastic fluctuations in textile production and prices.

Social Security Reminder. Employers are reminded that the amount of Social Security tax withheld from employees' pay must be increased to 3% on wages up to $4,800 earned on and after Janu-

ary 1. Amount contributed by the employer went up to 3% at the same time. Increases are scheduled again in 1963, 1966, and 1969, until employers and employees are each contributing 4½%.

Big Drop in Textile Failures. Only 61 firms in the textile mill products classification failed during the first eleven months of 1959, compared with 88 during the similar period of 1958, according to Dun & Bradstreet, Inc. The 1959 failures had liabilities of $6,326,000; the figure for 1958 was $8,599,000.

British Remove Import Bars. All restrictions on imports of American textile and apparel products into the United Kingdom under the British Token Import Plan have been abolished. However, tariffs remain unchanged.

Wash - and - Wear Standards. Standards for wash-and-wear fabrics purchased by its members have been established by the Boys' Apparel and Accessories Manufacturers Association, Inc. U.S. Testing Company has set up an official testing laboratory to verify that materials and fabrics purchased by BAMA members meet the standards adopted by the Association. (At the time of this writing, Textile Fabrics Association announced that its members would not cooperate in the BAMA program.—Editor.)

Japanese Build C. A. Mill. Japan is helping El Salvador to build a $2,500,000 textile mill, according to a report submitted to the Senate Foreign Relations Subcommittee.

Silver Lining for F-F. Despite the fact that 1959 was another bad year for full-fashioned hosiery, National Association of Hosiery Manufacturers does see some comfort for F-F knitters: ". . . companies operating in the full-fashioned field today are . . . in a considerably better situation, volume wise, than they were say in 1948 or in 1952 . . . operating units and managements have shrunk faster than sales . . . the market is 15% larger for the average unit."

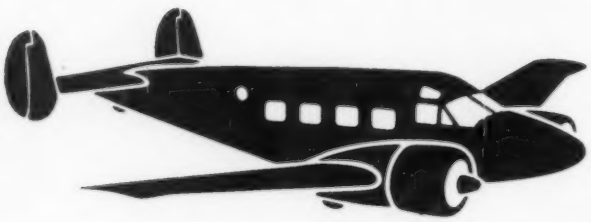
End-Breakage Study. Auburn Research Foundations, Inc., of Auburn University, has been awarded a U. S. Department of Agriculture contract, totaling

about $30,000, to study end breakage in spinning cotton yarns. Effect of selected fiber properties and processing variables will be investigated.

U. S. Cause of Canada's Textile Depression? Discussing the over-capacity and over-expansion which he said plagued the U .S. textile industry after the Korean War, W. H. Young, vice-president of Hamilton (Ont.) Cotton Co., said, "The remedy was not an

orderly curtailment of shifts until production balanced demand—rather an all-out price war developed, margins plummeted, mills went bankrupt, and the weaker fell by the wayside. This is the picture of the chaotic conditions . . . which were freely ex-

NEW BROCHURE



For a new brochure describing a fine selection of industrial and executive airplanes, write:

Southern Airways Company

ATLANTA, GEORGIA **TEL. POplar 7-3766**

Charlotte, N. C., Tel. FRanklin 6-7150 *Birmingham, Ala., Tel. FAirfax 2-0502*

Beechcraft AIRFLEET OF THE TEXTILE INDUSTRY

An American-made woolen and worsted wardrobe was recently given as a bonus prize to a contestant on NBC-TV's program "The Price Is Right." Retail value of wardrobe is about $1,600.

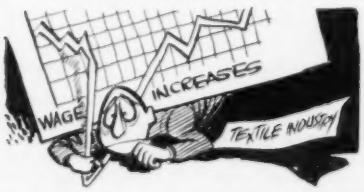
ported to Canada [by dumping of surplus goods] . . . causing the most severe recession that [the Canadian textile industry] has yet experienced." However, Mr. Young predicts that U. S. production capacity and consumer demand will soon be in balance, if they are not already.

Cashmere Test in the Works. Preliminary work has been completed in developing a test for determining the percentage of coarse fibers in cashmere, according to a report made at a recent meeting of Subcommittee A-3 of the American Society for Testing Materials. Such a test is needed because of the Federal Trade Commission ruling that a product labeled "100% cashmere" must contain not more than 3% coarse fibers.

Materials Handling Course. The Eighth Annual Materials Handling Short Course will be held at Georgia Tech in Atlanta, February 4 to 6. Registration deadline is January 29. This year's program will stress the engineering fundamentals of materials handling and will call upon the registrants for more participation and more performance than has been required

Labor-Management News

Textile Wage Increases at Bottom. In a survey of 21 manufacturing industries, the textile industry placed last in the median size of wage increases becoming effective in 1960 under contracts



now in force. Average deferred increase for all of the 1141 wage contracts analyzed was 7.1 cents per hour, while the average for 57 textile contracts was 4.8 cents, the Bureau of National Affairs, Inc., reports.

Beacon Workers Defeat UTW. Employees of Beacon Manufacturing Co., Swannanoa, N. C., voted 1,345 to 244 against representation by United Textile Workers of America, in a recently held election. This was the third defeat at Swannanoa for the union since 1946. In the last NLRB election, held in 1950, the union received about twice as many votes as it did in this attempt.

Newly Unionized. Stearns & Foster Co., Lockland, O., with 700 employees, and Plymouth Finishing Co., Fall River, Mass., with 70 employees, recently signed first-time contracts with Textile Workers Union of America.

New Contracts. A new contract calling for wage boosts of 13 cents to 18 cents per hour over a two-year period was recently signed by Courtaulds (Alabama) Inc., LeMoyne, Ala., and Textile Workers Union of America, after a 24-hour strike. A pact calling for a 10-cent increase plus fringes was negotiated by TWUA and Fawcett Mills, Inc., New Bedford, Mass. TWUA members at Orr Felt & Blanket Co., Piqua, O., get wage increases of 21 cents to 30 cents an hour over the next two years, according to the terms of a new contract.

NLRB Finds For and Against Mills. In three recent rulings, the National Labor Relations Board returned findings favorable to the mills twice, and unfavorable once. In a suit filed against Granite Hosiery Mills, Inc., Mt. Airy, N. C., NLRB ruled that the mill did not discriminatorily discharge an employee. In a case brought by

Textile Workers Union of America, an NLRB trial examiner refused to recommend that an order be issued against Danville (Pa.) Silk Co. for allegedly giving illegal help to an independent union. In the third case, an NLRB trial examiner ruled that Franklin (N. C.) Hosiery Mills fired two employees for union activity and engaged in other unfair labor practices.

United Elastic's Stuart, Virginia, plant.

United Elastic's Woolwine, Virginia, plant.

United Elastic Needed Power . . . Water . . . Good Roads . . . Dependable Labor

found them all in VIRGINIA

Easthampton Rubber Thread (subsidiary of United Elastic) plant at Stuart, Virginia.

When United Elastic Corporation was considering a new plant some years ago, they sought a locality with ample electricity and water, good roads for trucks, and conscientious labor. After intensive study, they chose Stuart, Virginia.

Today that plant is four times its original size, and two other Virginia plants have been built. Altogether, these 3 plants have nearly a half-million square feet of floor space . . . use 1,582,000 gallons of water a day . . . 720,000 kilowatt hours of electricity a month . . . employ 1,041 skilled Virginians. Products include elastic braids, thermal fabrics, woven elastic webbings, raschel knit elastic fabrics and rubber thread.

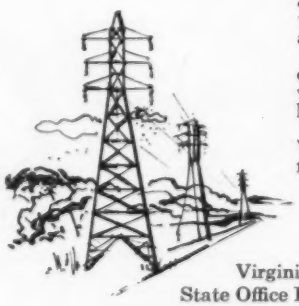
Largest manufacturer of its kind in the world, United Elastic is proud of the diligence, intelligence and cooperation of its Virginia employees. Labor turnover is less than 1%. Safety record is excellent . . . over 3,500,000 man-hours without loss of time due to work injury. Most employees are below middle age, come to work from a radius of 25 miles.

United Elastic's plants are well-served by Virginia's excellent highway system . . . have plenty of acreage and water for further expansion. Cooperation of state and local governments is "highly satisfactory."

Let us tell you more about growth opportunities in Virginia. Phone, wire, write or visit in complete confidence . . .

***Let These Outstanding Industries Tell You Why They Have Located in* VIRGINIA**

- A•S•R Products Corporation
- The Dow Chemical Company
- General Electric Company
- Sperry Piedmont Company
- Allied Chemical Corporation
- ITT Corporation



C. M. Nicholson, Jr., Commissioner
Division of Industrial Development
Virginia Dept. of Conservation and Economic Development
State Office Bldg., Richmond, Va. • Phone MIlton 4-4111 Ext. 2255

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Virginia's a wonderful place to play or work. Send for Free Vacation Guide Book.

in the past. Details from Richard Wiegand, director, Short Courses and Conferences, Georgia Institute of Technology, Atlanta, Ga.

Lighting for Cotton Classing. American Society for Testing Materials has issued a tentative recommended practice for lighting cotton classing rooms for color

grading, based on methods developed and followed by the U. S. Department of Agriculture. Copies of the practice, ASTM Designation D 1684-59T, are available from ASTM at 1916 Race St., Philadelphia 3, Pa.

Wool Support Prices. A shorn wool incentive price of 62 cents per pound and a mohair support price of 70 cents per pound have been announced by the U. S. Department of Agriculture for the 1960 marketing year which begins April 1, 1960. The 1960 prices are the same as for the first five years of the program running from 1955 through 1959 marketing years.

Installment Carpet Sales Boom. Installment credit selling continued to boost sales of more and better grade carpeting to consumers during 1959, Stuart S. Linder, vice-president of Allied Building

Credits, Inc., told members of the American Carpet Institute recently. The average retail credit transaction financed by his company last year reached $620, up 26.5% from 1954. He estimated that carpets financed for home use amount to an annual volume of about $200 million.

Canadian Textile Standards. "Standard Textile Test Methods 4-GP-2" compiled by the Canadian Government Specifications Board have been accepted by the Textile Technical Federation of Canada, coordinating group for Canada's primary textile industries. TTFC recommends their use by all segments of the industry.

Carter Sees Sales Jump. Product improvements and a stepped-up merchandising program are expected to "contribute to a banner beginning for the 1960's" for the William Carter Co., according to Lyndall F. Carter, president of the firm. However, "The successful last year of the decade, which could hardly be called the fuss-free fifties, might well herald the prologue of the decade of the golden egg for the resourceful organization and the decade of the goose egg for the relaxed," he said.

Knit Machinery Course at PTI. A course covering knitted outerwear machinery is being offered by the Philadelphia Textile Institute in cooperation with the Pennsylvania District of the Knitted Outerwear Manufacturers As-

How Much Will A Strike Cost Your Employees?

If an employee in your manufacturing firm takes home (after all deductions) $60 a week, and . . .

IF A STRIKE LASTS **1 week** and his hourly gain is . . .	2¢	it will take him 1 Year and 23 Weeks
	4¢	it will take him 38 Weeks
	6¢	it will take him 25 Weeks
	8¢	it will take him 19 Weeks
	10¢	it will take him 15 Weeks
	16¢	it will take him 9 Weeks
	20¢	it will take him 7 Weeks
	to make up for pay lost.	
IF A STRIKE LASTS **4 weeks** and his hourly gain is . . .	2¢	it will take him 5 Years and 40 Weeks
	4¢	it will take him 2 Years and 46 Weeks
	6¢	it will take him 1 Year and 48 Weeks
	8¢	it will take him 1 Year and 23 Weeks
	10¢	it will take him 1 Year and 8 Weeks
	16¢	it will take him 38 Weeks
	20¢	it will take him 30 Weeks
	to make up for pay lost.	
IF A STRIKE LASTS **10 weeks** and his hourly gain is . . .	2¢	it will take him 14 Years and 22 Weeks
	4¢	it will take him 7 Years and 11 Weeks
	6¢	it will take him 4 Years and 42 Weeks
	8¢	it will take him 3 Years and 31 Weeks
	10¢	it will take him 2 Years and 46 Weeks
	16¢	it will take him 1 Year and 42 Weeks
	20¢	it will take him 1 Year and 23 Weeks
	to make up for pay lost.	
IF A STRIKE LASTS **15 weeks** and his hourly gain is . . .	2¢	it will take him 21 Years and 34 Weeks
	4¢	it will take him 10 Years and 43 Weeks
	6¢	it will take him 7 Years and 11 Weeks
	8¢	it will take him 5 Years and 21 Weeks
	10¢	it will take him 4 Years and 17 Weeks
	16¢	it will take him 2 Years and 37 Weeks
	20¢	it will take him 2 Years and 9 Weeks
	to make up for pay lost.	
IF A STRIKE LASTS **20 weeks** and his hourly gain is . . .	2¢	it will take him 28 Years and 44 Weeks
	4¢	it will take him 14 Years and 22 Weeks
	6¢	it will take him 9 Years and 32 Weeks
	8¢	it will take him 7 Years and 11 Weeks
	10¢	it will take him 5 Years and 40 Weeks
	16¢	it will take him 3 Years and 32 Weeks
	20¢	it will take him 2 Years and 46 Weeks
	to make up for pay lost.	

Source:
"Your Personal Strike Cost Computer" Harmon E. Snake, Bridgeport, Conn.

PROVEN SUPERIOR

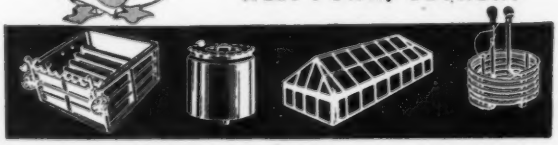
In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans* are proven superior. They require less horsepower . . . are easier on bearings . . . and save floor space with no loss in drying surface. And the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.
Furnished Teflon-coated if desired.

FOR ECONOMY AND QUALITY. Our modern and progressive metal-working shops, our skilled craftsmen, our know how—these are guarantees of quality. For custom tailoring of stainless steel, call, wire, or write *now*.

*U.S. PAT. OFF. NO. 2779104

Fabricated and installed at Lanett Bleachery and Dye Works, Lanett, Alabama by Sims Metal Works.

Sims
METAL WORKS
WEST POINT, GEORGIA



Harley D. Hohm, Inc., 128 Buist Ave., Greenville, S. C.

Friday Textile Machine & Supply Co., Gastonia, N. C.

FABRICATORS SINCE 1928

"Government Competition Is Ruinous"

The government now *buys* the bulk of the crop and offers it for resale at several cents per pound less than it pays for it.

Almost all the cotton produced is classed by the government and placed in a catalog which has general circulation in the cotton trade . . . As a consequence of this new system of government intervention in the market, many cotton mills are now buying their cotton direct from the government.

Cotton merchandising is a highly technical and complicated commercial operation and, as is well known, is done on extremely small margins of profit.

Government intervention will destroy much of the distributive machinery for the price-supported and acreage-restricted parts of agriculture. Every bit of this activity that the government takes over, it takes away from private dealers. In the case of cotton, the futures exchanges as institutions are living up their surpluses; and this also is what the remaining brokers and commission houses are doing, except as the latter may be supported by business in stocks.

A number of spot cotton dealers have gone out of the cotton business, and I am sure this season will see many more following them. . . .

One of the most serious effects of this attrition is that capable private machinery will have been substantially destroyed if and when the government withdraws. Unless the United States is going completely socialistic, the government must eventually withdraw from this business. Unfortunately, the history of the past thirty years proves conclusively that government has been getting deeper and deeper into the business and, as nearly everybody knows, with disastrous results.

The crops, in the marketing of which the government has intervened, are stated to represent only about 20 per cent of the total value of production marketed by farmers. The other 80 per cent has moved normally from producer to consumer, and not into a government warehouse.

In the last figures I have seen, I believe the Census put the farm dwellers at 12 per cent of the total population. Thus, the non-farm 88 per cent of our population, representing the great majority of our consumers and taxpayers, are paying the exorbitant costs of a farm program which is fast transforming some proportion of the remaining 12 per cent into wards of the government.

Generally, the people of the United States have little understanding of the extent to which government has become involved in the affairs of agriculture and the far-reaching effects that such involvement is having. If they understood it, they would put a stop to it.—W. L. Clayton, Anderson, Clayton & Co.

sociation. It will cover designing possibilities, control cards and chains, and pattern wheel and design set-up of the most widely used outerwear machines.

More Textiles for Pakistan. The government of Pakistan has announced that the capacity of the country's textile industry will be expanded by 300,000 spindles and 3,000 looms. As a result, Pakistan is expected to cut its imports of finer yarns and fabrics and to increase its exports of cotton textiles.

AATT to Expand. The board of directors of American Association for Textile Technology has approved a new constitution and bylaws to put the organization on a national basis. The new regulations provide for formation of regional chapters upon application of 30 or more members living in the area. AATT now has about 1,000 members, principally in the New York Metropolitan area, although chapters have recently been formed in Tennessee and North Carolina, and a student chapter in New Bedford, Mass.

Wool Contract for Harris. U. S. Department of Agriculture has awarded a contract for about $30,000 to Harris Research Lab-

oratories for research designed to develop improved chemical processes for removal of vegetable matter from wool.

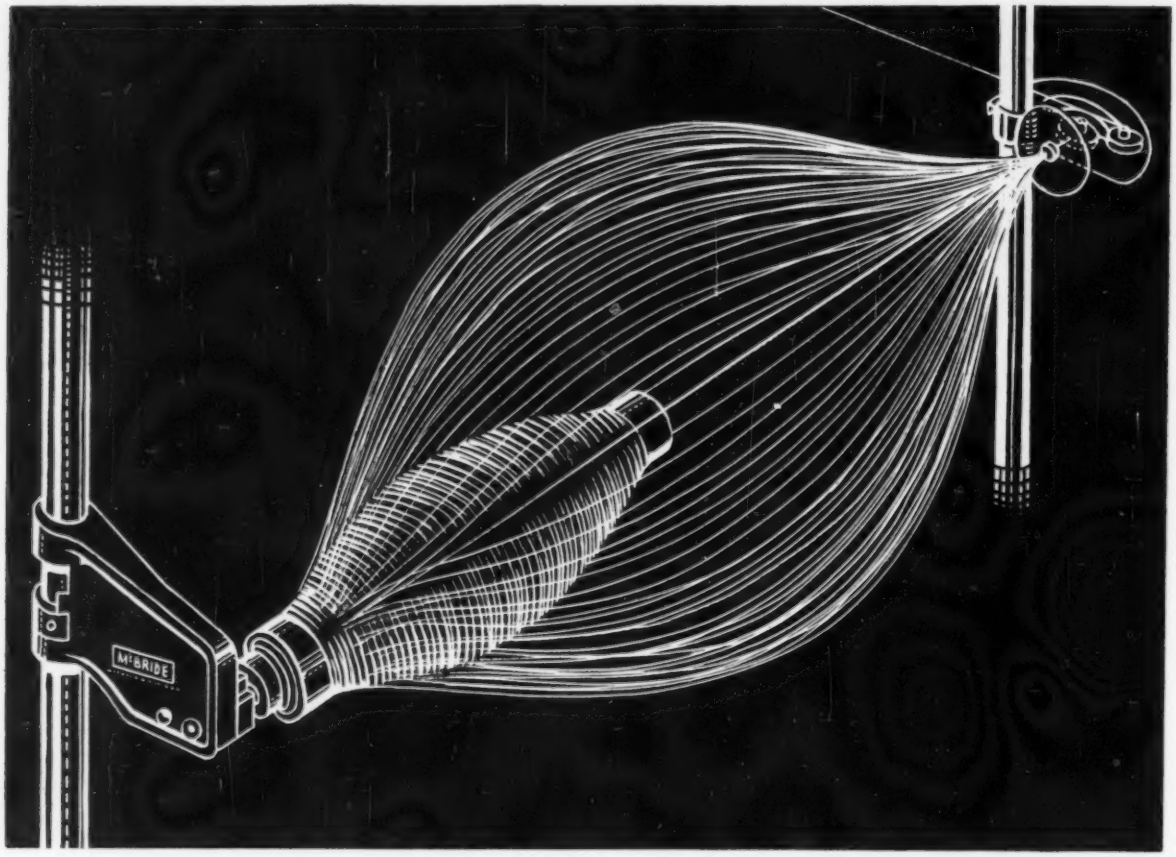
Japanese Exports to Canada Soar. Figures released by the Canadian Apparel and Textile Manufacturers Association, all taken from Japanese sources, show that in the first half of this year shipments of textiles and clothing from Japan to Canada were valued at $19,576,000, compared with $10,968,000 for the first half of 1958. Canadian producers expect that the 1959 total will reach $38,500,000, against $26,568,000 last year.

QM Needs Scientific Director. Quartermaster Research & Engineering Center Laboratories, Natick, Mass., have announced that a vacancy exists for Scientific Director of the Laboratories, at a

salary of $15,000 per year. The Center Laboratories have five research and engineering divisions, including a textile, clothing, and footwear division. Details are available from Henry R. Rose, civilian personnel officer at the Laboratories.

Resolve now to
save each issue of TI

BE ON TARGET WITH McBRIDE...



HEAVY DUTY CREEL ARMS

Are your creel arms overloaded? Have you a problem reaching the target (entrance eye) on your tensions? If so you are losing warping efficiency. McBride's heavy duty package arm is designed specifically to correct this situation!

No Sag—even the largest packages stay straight on target for accurate over end draw off.

Fast Change—arm swings back out of way for package change, no interference with ballooning yarn.

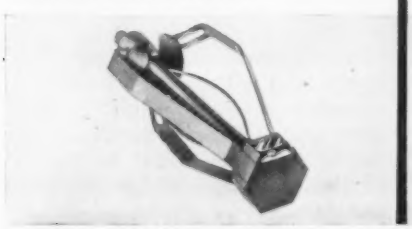
McBride swing arm assemblies are made to fit all packages.

Instant changeover with McBride Quik change cone and large diameter package holders.

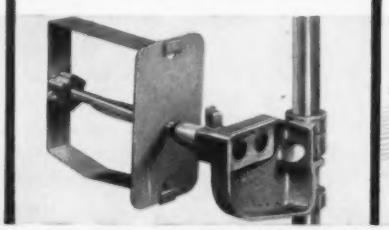
Complete new creels or fittings to modernize your existing creels.

Write today for our latest catalog.

UNIVERSAL CONE HOLDER



LARGE DIAMETER PACKAGE HOLDER



MERCURY SWITCH STOP MOTION

LET McBRIDE STUDY YOUR WARPING SITUATION. YOU MIGHT BE SURPRISED WITH THE COSTS YOU CAN SAVE, THE IMPROVED QUALITY IN THE WARPS YOU PRODUCE
CREELS *FOR EVERY PURPOSE* CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.

McBRIDE

Complete engineering service is part of every McBride installation.

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Mr. Barton

How does the new labor law affect your mill?

Provisions of the Landrum-Griffin Bill which are of most concern to businessmen

by William B. Barton
General counsel and manager Labor Relations and Legal Dept. Chamber of Commerce of the U. S.

■ NO ONE would have thought early last year that there could possibly be legislation during the 86th Congress that would outlaw most secondary boycotts, place restrictions on recognition picketing, require union officials who handle union funds to post bonds, or protect the secret ballot rights of union members in union elections. Yet, we have seen all this and much more too enacted into law during the first session of the 86th Congress.

Let's look at the contents of the new law [the Landrum-Griffin Bill]. What does it actually do?

First, it is divided into seven titles —in other words, it has seven principal divisions [see accompanying box].

It will not be possible to do more than outline in a very general way what is in these parts. In doing so, I will try to emphasize those provisions which are of most concern to businessmen, and, conversely, I will touch more lightly those which concern businessmen only remotely.

First in the new law is a sort of introduction which precedes the seven titles I mentioned. This introductory material details the findings, purposes, and policy of the new law and sets forth a number of definitions which will, at times, become exceedingly important. . . .Those who want to make a careful study of the new law will find it advisable to study the introductory provisions intently.

Now, let's consider the seven principal divisions of the law proper.

RIGHTS OF UNION MEMBERS

The first embodies the much publicized bill of rights for employees. These rights are largely new in that they have not heretofore been set forth in statutory law. They are in addition to those created moreover, by any other state or federal law or by union constitutions or by-laws.

Among these rights is that of each and all members to nominate candidates, to vote in elections or referendums, to attend and participate in union meetings, to have free speech both inside and outside union gatherings, to assemble in non-union sponsored groups, and to have protection against union dues or fees being increased without approval by the members.

There is also a ban on union interference with the right of a member to sue the union or its officials in the courts. Likewise, members who would appear as witnesses in such proceedings or who petition or write legislators about such matters, are protected.

If there is violence or a threat of violence to interfere with these rights, a criminal penalty follows, with up to $1000 fine or imprisonment for as long as one year, or both.

Members are protected under this section, moreover, against unreasonable disciplinary action. In the event of a disciplinary proceeding, the member is entitled to be served first with written charges. He must be given a chance to prepare his defense and then have a full and fair hearing.

Another duty imposed by this title is the requirement that local unions furnish employees who so request with copies of collective bargaining agreements which affect them and in the case of other than a local labor organization to furnish a copy to each constituent unit with members affected by such an agreement. Each such agreement must be kept on file by the organization secretary, moreover, for inspection by affected members.

I have described these provisions of the bill of rights in some detail, because, indirectly, employers are likely to feel the results.

Democracy, of course, can not be fully legislated. It depends in large measure on background, attitude, and political climate; but here we have guarantees in the new law designed to help employees make their unions democratic.

Unless the provisions of the new Title I are allowed to become a dead letter, they may well affect substantially the quality, nature, and activity of American labor unions. That means they could affect employers who have to deal with unions.

Continued on page 113

Outline of "Labor-Management Reporting and Disclosure Act of 1959"

Title 1—Bill of rights of members of labor organizations

Title 2—Reporting by labor organizations, officers and employees of labor organizations, and employers

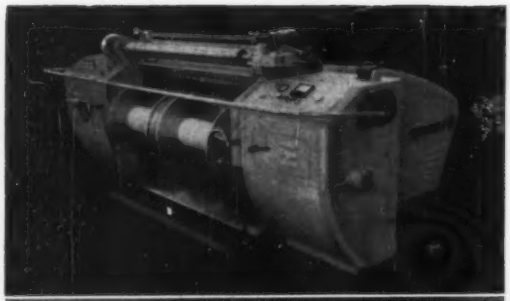
Title 3—Trusteeships

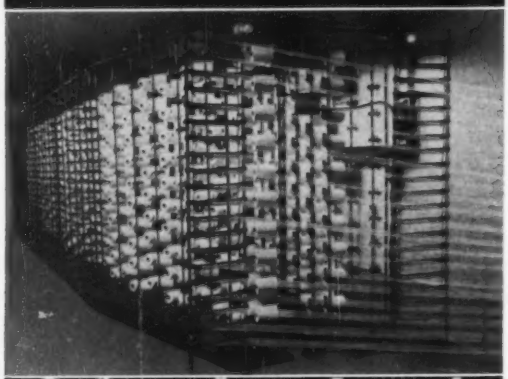
Title 4—Elections

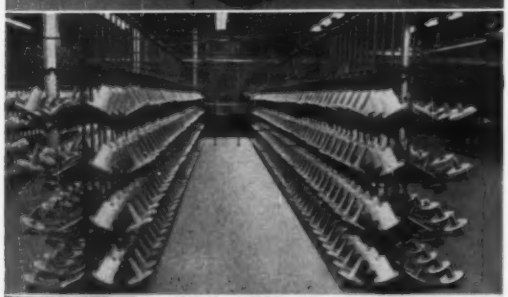
Title 5—Safeguards for labor organizations

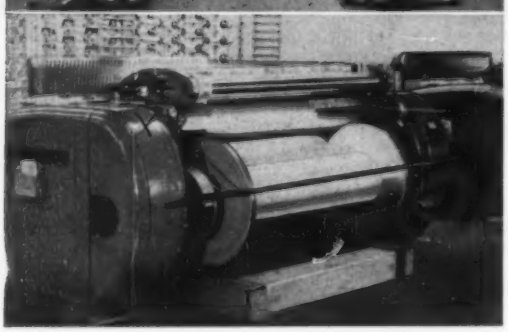
Title 6—Miscellaneous provisions

Title 7—Amendments to the Labor-Management Relations Act of 1947 (as amended)









THE UNBEATABLE COMBINATION

...used by more yarn producers than any other

Leading mills everywhere rely on this equipment because of its speed, high quality production, versatility, convenience, and economy.

Cocker Tricot Warper Model MB 55-32 (Top Photo)
Handles 2-21″, 1-42″, 1-55″ Beams, or 1-50″ or 2-25″ Raschel beam with simple changeover from one set to another. Individual controls, in full view and easy reach of operator. Has all modern features and safety devices. Normal sustained speeds up to 600 YPM.

Cocker Horizontal Type Magazine Cone Creels (Second Photo)
Standard creel is built to take four pound packages but can be built to take larger packages. Takes any type package. Cone holders are arranged to swing around inside the "V" for re-creeling without interfering with the operation of the machine. Equipped with electronic eyeboard stop motion. A wide range of tensions is available.

Cocker Vertical Type Magazine Cone Creel (Third Photo)
Available in true vertical or magazine . . . equipped for any type package. Tensions are new improved type with adjustable posts for varying tensions in the yarn. Tensions can be run on light yarns without washers, or washers can be used on one or both posts when yarn requires it. Electronic stop motion available.

Cocker High Speed Spindle Driven Warper (SD-49) (Bottom Photo)
Will handle any type yarn. Produces unexcelled synthetic warps from finest deniers to heaviest tire cord yarns. Takes section beams with flanges up to 40″ dia. Produces warps of any desired density at speeds up to 1000 YPM.

Write for full information today.

COCKER MACHINE & FOUNDRY COMPANY

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WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

RECENT TECHNICAL AND COMMERCIAL DEVELOPMENTS

by J. B. Goldberg
Consultant to the Textile and Allied Industries

Exclusive

FIBERS AND YARNS

Self-Defoliating Cotton Plant. A new variety of cotton plant is reported to have been developed in Russia which sheds its leaves without chemical treatment. This feature makes the plant suitable for relatively simple machine picking.

High Tenacity Arnel Staple. It is reported that the Celanese Corp. has developed a high-tenacity Arnel staple which is now undergoing evaluation.

Polypropylene Yarns and Staple. Industrial Rayon Corp. has announced plans to enter commercial production of polypropylene staple, tow, and continuous filament yarns, to be identified by the name "Prolene." Staple and tow will be made in a range of 2 to 15 denier per filament, and continuous filament yarns in sizes from 210 denier and up. Stressed are high strength, abrasion resistance, and low density, providing greater cover than any other type of synthetic fiber. Heavier denier staple fibers are reported to be under evaluation in carpeting. * * * The AviSun Corp., owned jointly by the American Viscose Corp. and Sun Oil Co., announced that its polypropylene fibers would be marketed under the name of "Olane."

Another Spandex Fiber. Globe Mfg. Co., Fall River, Mass., reported the development of elastic threads of synthetic polyurethane materials, claiming aging and tensile properties superior to natural rubber. One disadvantage was tendency to discolor on exposure to light, but there were indications that this may be overcome by the addition of antioxidants and ultraviolet light absorbers.

"Synthetic Wool." Russian scientists claim to have created a "synthetic wool" which is ten times stronger and ten times cheaper than wool. Basic ingredients were reported to be lignin and cellulose derived from wood. According to reports released, molten lignin is mixed with spichlorohydrin, a cellulose derivative, then spun into fiber. The fibers are said to be highly resistant to moisture, but are readily dyeable.

Chemstrand's Textured Yarn. "Cumuloft" is the name adopted by Chemstrand Corp. for a new textured filament nylon yarn for carpets. The yarn has a modified cross-section with built-in crimp and is priced at $1.53 for 1230/68 and $1.47 for 3690/204.

Coated Textile Filaments. A British patent disclosed a method of applying to the surface of textile filaments a plastic, such as polyvinyl chloride or polystyrene, containing an azoic "blowing agent" which decomposes when heated. It was suggested that the resultant scaly surface on rayon yarns might permit easier bonding to rubber for tire cord, or that such yarns would have a warmer handle and a number of properties associated with scaled textile fibers such as wool.

Puffing Rayon and Acetate Fibers. Assigned to a Swiss inventor, a U. S. patent covers a process for treating dry rayon or acetate fibers with an aqueous solution of alkali metal permanganate saturated with barium chloride, then subjecting them to action of an aqueous solution of hydrogen peroxide. The oxygen bubbles generated inside of the fibers do not break through the surface, and barium sulfate is precipitated within the enlarged hollow spaces.

New Mylar Yarn. The Metlon Corp. is offering a new "Woodtone" yarn to simulate wooden weaves.

MACHINERY AND PROCESSES

Automated Cotton Spinning Process. The Toyo Spinning Co., Osaka, Japan, reports development of a new continuous automated cotton spinning system claimed to provide draft ratios of from 400 to 700, compared to about 200 on present super high-draft systems. Although yarns as fine as 60s have been spun, the system is considered best on 40s yarn. Floor space saving is said to be appreciable and labor requirements reduced by one-half.

Continuous Shrink-Resistant Wool Process. Stevensons (Dyers) Ltd. of Derbyshire, England, is now using a continuous process in place of a batch method for making shrink-resistant wool. The machine is a backwasher normally used for wool top scouring, and capacity is at least 15,000 lb of wool per 24 hours. A continuous process for shrink-resist treatment of yarn is expected to be available in the near future.

Hosiery Yarn Clipper. Burlington Hosiery Co. has been issued a U.S. patent on a yarn clipper for ladies' two-feed seamless knitting machines. Describing the clipper as a "practical and effective device for clipping yarn ends during the knitting operation," Burlington claims that it eliminates the need for clipping during inspection, improves the efficiency of the machine, and enhances the quality of the stocking. The device can be installed on either new or existing two-feed machines without substantial modification, and can be adapted to all popular

Continued on page 95

CROWN'S NEW C-TRON

LOW FREE FORMALDEHYDE RESIN

. . . diminishes odor problems

often eliminates afterwash

While imparting high quality crease and shrink resistance, Crown's C-TRON resin solves formaldehyde odor-problems . . . both in the processing plant and in the finished fabric. Its extremely low free formaldehyde content has enabled many plants to eliminate the afterwash process entirely!

Crown's representatives will gladly give you complete details concerning the new C-TRON thermosetting resin including how it may solve any resin problems you may have involving deleterious effects upon light fastness of reactant type dyestuffs. Call your man from Crown — or write direct!

Crown Chemical

CORPORATION **240 INDIA STREET, PROVIDENCE, RHODE ISLAND**

Peterboro, N. H., Greensboro, N. C., Burlington, N. C., (Warehouse), Greenville, S. C., Ware Shoals, S. C.
IN CANADA: Marwin Dyestuff of Canada Ltd. IN SWITZERLAND: Bubeck & Dolder, Basle, Switzerland.

EXECUTIVE VIEWS

Prepared by a man who is closely identified with the textile industry.

The will to work...a forgotten resolution

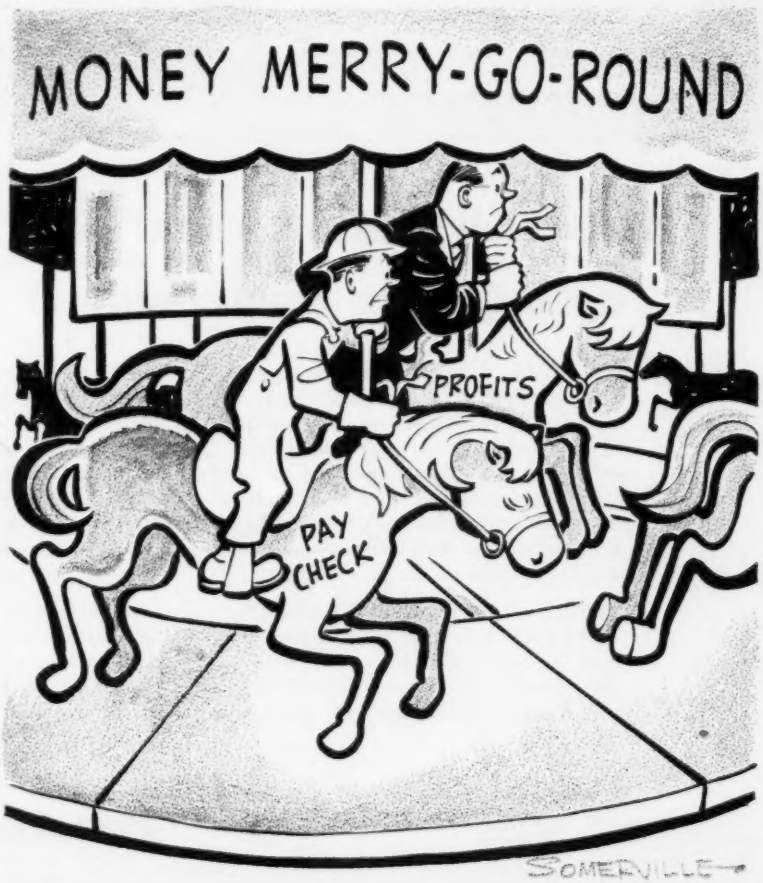
Exclusive

SOME PEOPLE have a systematic way of doing things. Take this business of making New Year's resolutions, for example. It does seem like a good idea to take a long look at ourselves at least once a year. However, since most of us don't enjoy the experience very much, we might be inclined to hurry it a bit.

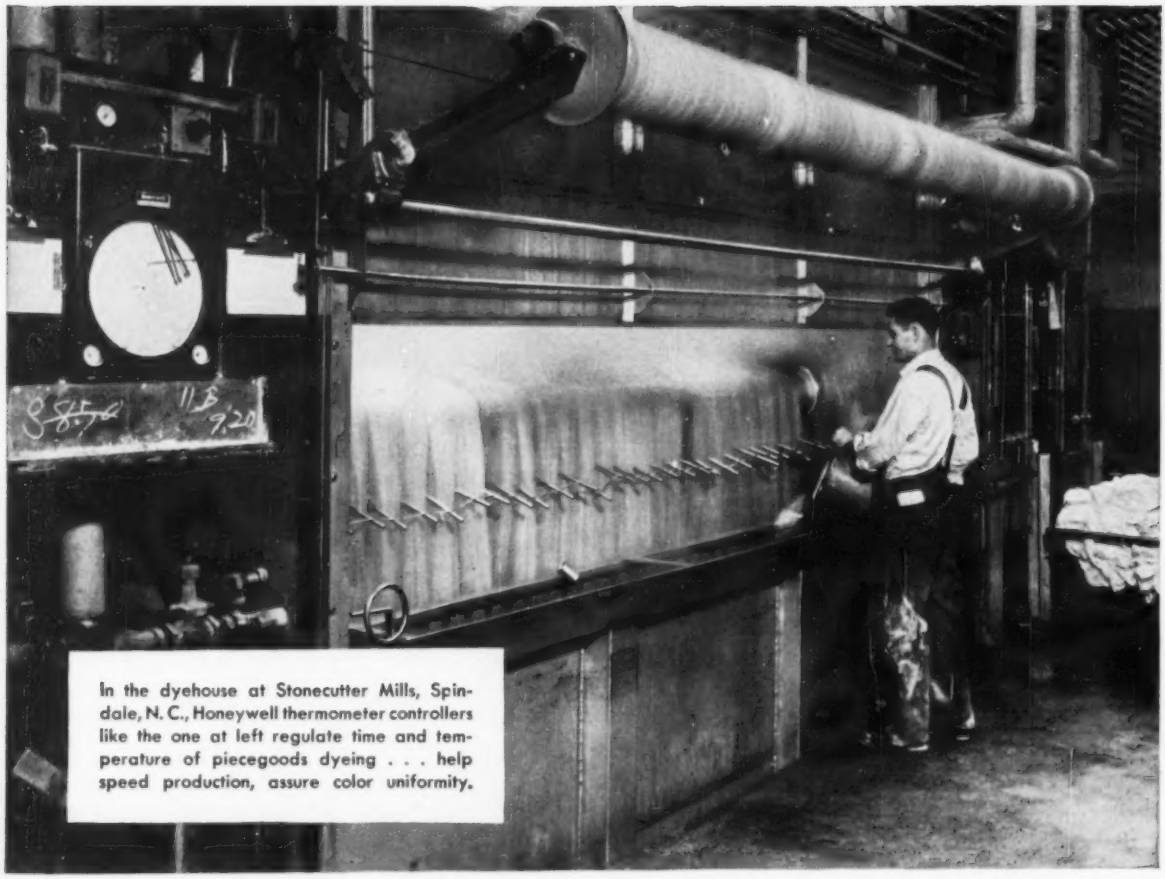
Not long ago, this country had a visit from a notorious, yet celebrated, international traveler. He roundly criticized many characteristics of our Western life, but he was strangely silent with regard to one. Now this is disquieting, for I suspect he would have mentioned that one too, had he not felt that things were going the way he wanted. He didn't comment on the one national trait which, possibly more than any other, has been responsible for our rise to world leadership—"The American Will to Work."

Naturally, every national or ethnic group has a will to work, but the American variety has always been conspicuous. Maybe you recall your grandfather saying, "The future? Boy, don't worry about the future, so long as you're willing to work!" Are we, as a people, as willing to work, even eight hours per day, as we were in former days? Not long ago, there were a half million Americans who weren't willing to work, or apparently so, though they were the highest paid employees in history.

In recent years, each of two million men annually has stopped



A GREAT RACE—BUT WHERE DOES IT END?



In the dyehouse at Stonecutter Mills, Spindale, N. C., Honeywell thermometer controllers like the one at left regulate time and temperature of piecegoods dyeing . . . help speed production, assure color uniformity.

Honeywell controls allow quick changeover in dyeing, keep quality high at *Stonecutter*

Stonecutter Mills dyes a variety of fibers . . . including nylon, Dacron, Orlon and acetates . . . in a variety of forms, *often all in a single day*. Dyehouse workers have to be skilled in quick changeovers . . . and their dyeing controls must be both accurate and flexible, for each fabric calls for a different dye, a different temperature, a different time cycle.

Though dyeing temperatures range from 130° to 212° F . . . and must be accurately held for cycles of 8 hours and longer . . . Honeywell dye control systems consistently assure production of top-quality dyed goods.

In your own mill, to increase efficiency, reduce costs and guard quality . . . to modernize a single process or an entire mill . . . call on Honeywell for complete, specialized textile instrumentation. From opening room to cloth room, Honeywell systems give you dependable, flexible control of temperature, pressure, humidity, regain, dew point and other variables.

For valuable help in matching controls to equipment, efficiently and economically, call on Honeywell at the planning stage. A Honeywell field engineer is as near as your phone. MINNEAPOLIS-HONEYWELL, Wayne and Windrim Aves., Phila. 44, Pa.

75th YEAR
PIONEERING THE FUTURE

Honeywell

H HONEYWELL SINCE 1885 *First in Control*

EXECUTIVE VIEWS

(from page 65)

work for some 20 working days. This in spite of the fact that since 1948 hourly earnings in the manufacturing industries have risen an average of 61%, while consumer prices have increased only 22%. Hours worked have decreased to the point where the average factory worker is working only 39 hours per week.

We have an established record of working shorter hours for higher pay. Can this happy state of affairs continue indefinitely, or will foreign competition eventually result in large-scale, involuntary unemployment? Will the American Will to Work survive the intoxication of "cradle to grave" schemes? Where do we go from here?

Those of you who intend making a few resolutions this year are hereby extended an equal share in the following: "Resolve, that by my daily actions, I will cultivate and fortify the American Will to Work." Like most resolutions, you won't find this one easy to keep. However, failure to adopt this resolution may some day lead to a situation in which someone else will be making our resolutions for us.

We have learned to promote our physical health by avoiding exposure to the extremes of weather conditions, by taking proper nourishment, by heeding the good advice of the medical profession, etc. The consumption of drugs and the number of occupied hospital beds indicate that physical and mental health will respond only in part to such a regimen.

In the same way, we have learned not to expose people to the extremes of industrial climate. Lavish country club surroundings can be just as damaging to the Will to Work as unduly harsh and forbidding ones. Proper nourishment often takes the form of good wages, opportunity for advancement, effective supervisory leadership, equitable job assignments, ample vacation allowances, and sound company policies. In addition, the progressive management keeps abreast of the ever growing

Continued on page 107

FUTURE EVENTS

Date	Event	Location
Jan. 6	American Association for Textile Technology	Vanderbilt Hotel New York City
15	Northern New England Section AATCC joint symposium with ASME Textile Engineering Div.	Smith House Cambridge, Mass.
15	Hudson-Mohawk Section AATCC	Chelsea House Tribes Hill, N. Y
15	Metropolitan Section AATCC	Hotel New Yorker New York City
22-23	Piedmont Section AATCC	Poinsett Hotel Greenville, S. C.
25-28	Plant Maintenance & Engineering Show	Convention Hall Philadelphia, Pa.
29	Rhode Island Section AATCC	Johnson's Hummocks Providence, R. I.
Feb. 7	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
8-9	National Cotton Council annual convention	Statler-Hilton Dallas, Texas
13	Southeastern Section AATCC	Callaway Gardens Pine Mountain, Ga.
18-19	American Society for Quality Control Textile Section annual conference	The Clemson House Clemson, S. C.
Mar 1-4	ASTM Committee D-13	Sheraton-Atlantic Hotel New York City
10-11	Fiber Society	Roosevelt Hotel New Orleans, La.
24-25	Textile Research Institute annual meeting	Hotel Commodore New York City
24-25	Textile Quality Control Association	Dinkler Plaza Atlanta, Ga.
Mar. 31-Apr. 1	ASME Textile Engineering Conference	N. C. State College Raleigh, N C.
April 7-9	American Cotton Manufacturers Institute annual meeting	Americana Hotel Bal Harbor, Fla.
20-22	Alabama Textile Manufacturers Association annual convention	The Buena Vista Biloxi, Miss.
21-23	National Association of Hosiery Manufacturers annual convention and Hosiery Industry Conference	Americana Hotel Miami Beach, Fla.
22	Textile Institute annual meeting	Midland Hotel Manchester, England
26-27	Institute of Textile Technology Technical Advisory Committee and Board of Directors	I.T.T. Charlottesville, Va.
28-30	Phi Psi National convention	Hotel Roosevelt New York City
29	Underwear Institute annual meeting	Hotel Biltmore New York City
May 11-14	Carolina Yarn Association	The Carolina Pinehurst, N. C.
19-21	Georgia Textile Manufacturers Association annual meeting	The Diplomat Hollywood, Fla.
23-27	American Textile Machinery Exhibition	The Auditorium Atlantic City, N. J
25-27	Narrow Fabrics Institute, Inc.	Northfield, N. J.
25-28	Tufted Textile Manufacturers Association annual convention	The Fountainebleau Miami Beach, Fla.
26-28	South Carolina Textile Manufacturers Association annual convention	The Cloister Sea Island, Ga.
May 31-June 2	Cotton Research Clinic	Grove Park Inn Asheville, N. C.
June 23-25	Southern Textile Association annual meeting	Grove Park Inn Asheville, N. C.
Sept. 8-9	Combed Yarn Spinners Association	The Cloister Sea Island, Ga.
27-28	Chemical Finishing Conference sponsored by National Cotton Council	Statler Hotel Washington, D. C
Oct. 3-7	Southern Textile Exposition	Textile Hall Greenville, S. C.
5-8	Carded Yarn Association annual meeting	Grove Park Inn Asheville, N. C.
6-8	AATCC national convention	Sheraton Hotel Philadelphia, Pa.

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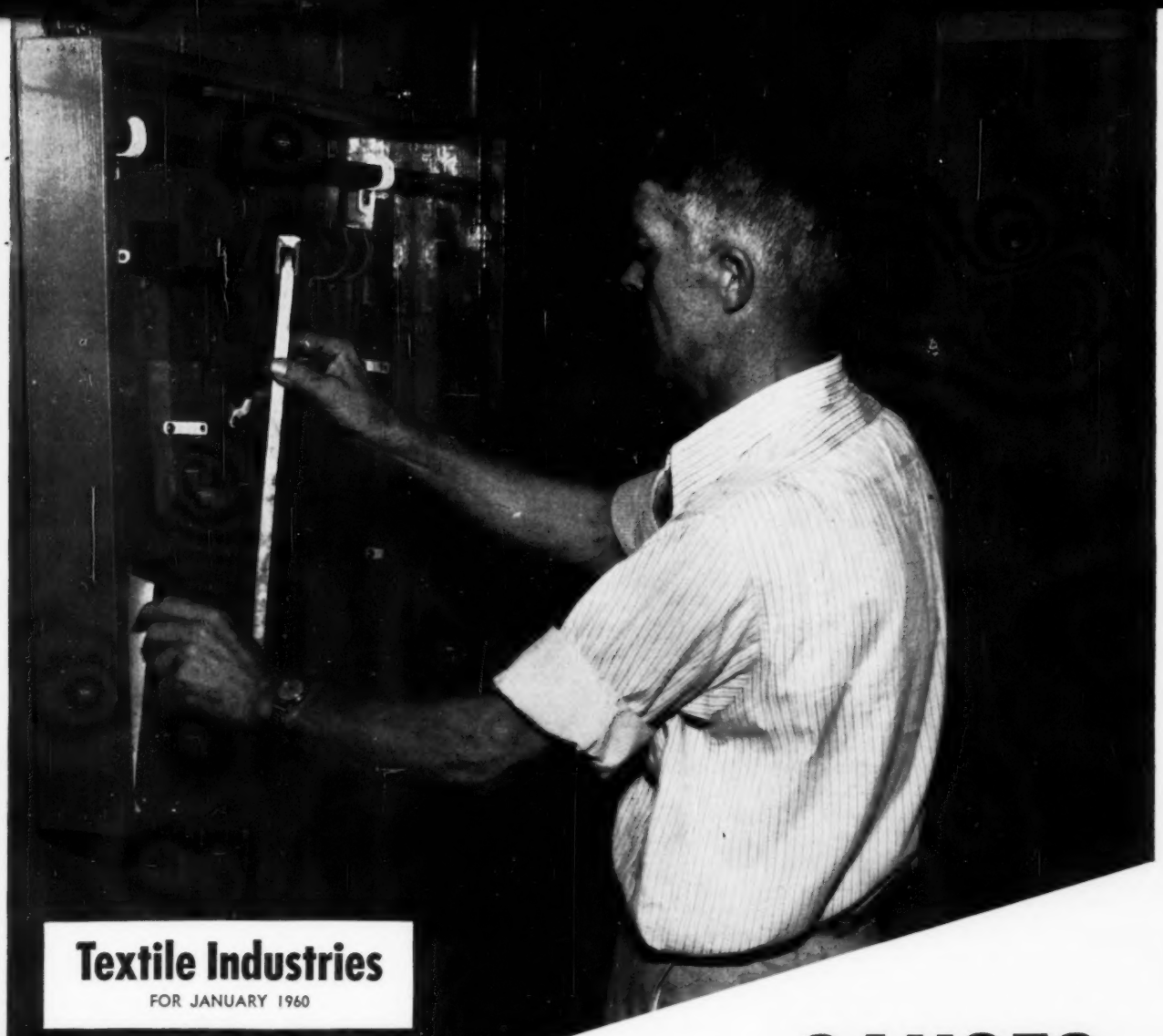


Textile Industries
FOR JANUARY 1960

GAUGES in Draper Loom maintenance

Why loom gauges are needed in the mill, and how to use them

This is the first in a series of exclusive articles on the use of gauges in the maintenance of Draper Looms. It was prepared with the help of Draper Corp. experts, and of dozens of mill men weaving all types of fabrics.

The series is *not* about loom fixing; gauges are intended to help prevent trouble, not to cure it after it happens. It therefore does not replace any of the information in the series of articles, "Draper Loom Fixing," which appeared in TI several years ago. Rather it should be used along with DLF, the two of them giving a complete guide to the care of Draper looms.

The first article, starting on the next page, introduces the series and begins the discussion of the use of gauges in lay alignment. Articles to follow will cover other points

in lay alignment, and will discuss harness motion timing and setting, picking motion, filling stop motions, protection motions, automatic filling motions, and shuttles.

After the articles have appeared in TI, they will be reprinted in book form, as a companion volume to "Draper Loom Fixing."—The Editors.

GAUGES in Draper loom maintenance

Article 1—Introduction to the series and lay alignment for fixed-reed looms

Staff prepared Exclusive

A GENERATION ago Draper Corporation made its first of the X-series looms, and made them so precisely that they "responded" to gauges. Many old-timers looked with downright suspicion on such mollycoddling and refused to have anything to do with such deviltry. Many of the younger ones just looked.

Now, a generation later, most looms do respond to such "deviltry," most fixers indulge in it, and the most progressive firms demand it. And this series of articles is designed to bring loom-fixing manuals up to date by introducing for the first time a precise step-by-step analysis of how looms are tuned by the gauge.

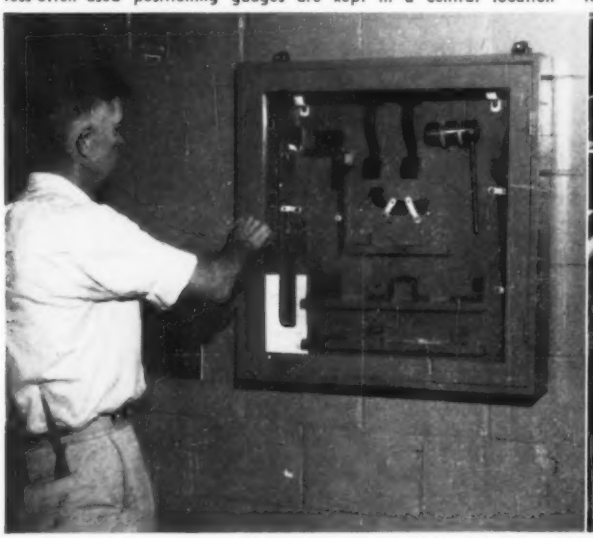
We feel the time is ripe. Just a few years ago, say ten for the sake of argument, there was still too much resistance to gauging for a manual on the subject to be worthwhile.

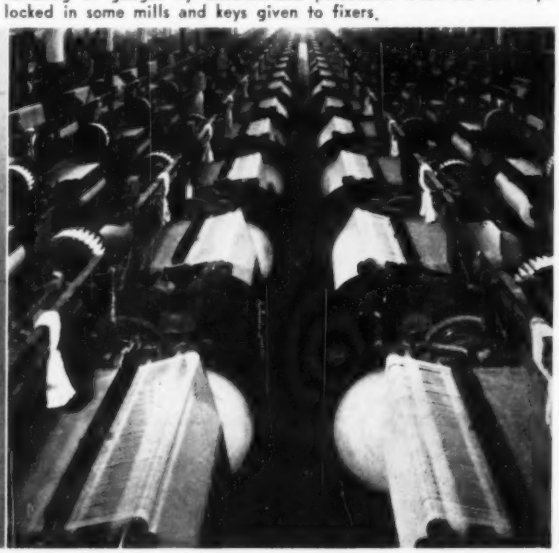
Understandably, the switch from the "every man for himself" philosophy of thirty years ago took time. Men who had trained earnestly in file-fitting and in tuning the looms of that era changed outlooks reluctantly. Management, trained in the same school, had also to make a change. Many of the "youngsters" of that era naturally looked about and adopted the "safe" way of fixing. A few "adventurous" souls studied the new approach, saw the light, and adopted it.

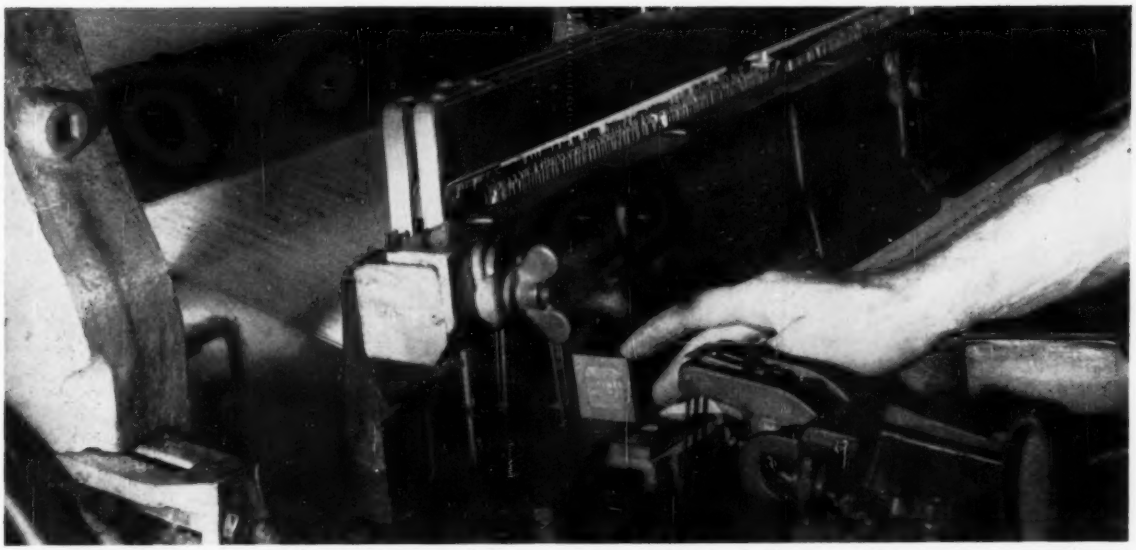
Those men have been the pioneers in a program of loom building and fixing that has seen a steady decline in such practices as periodic overhauling and a steady increase in loom performance. With gauges, looms are maintained automatically in a "just overhauled" condition. Thus, probably the hardest single bit of learning an experienced fixer has to acquire in mastering the "new" technique is that of knowing when to replace a worn loom part. Previously, this just wasn't done as long as there was another pick left in it.

In the long run, gauges make the fixer's life a much happier one—imagine fixing on a stand of looms that never wear out, never become so full of intangible troubles that symptoms are hope-

Now available for the entire X family of looms and the Model E, loom gauges make the fixer's life a much happier one. Shuttle boxing and loom picking gauges are usually carried by fixers. The less-often-used positioning gauges are kept in a central location convenient to all fixers. Note in the left photo the neat mill-built cabinet for storing gauges. Door keeps lint out and discourages handling of gauges by unauthorized personnel. Cabinets are kept locked in some mills and keys given to fixers.







Draper Gauge No. 57 and a straight edge long enough to span the shuttle race and rest against both box backs will prevent most shuttle wear if the loom is kept properly adjusted to them. They will not eliminate shuttle wear entirely, however, as poor harness timing, inadequate shedding, and nonparallel pickers will introduce wear patterns too.

lessly garbled.

We naturally have avoided giving space to erecting and overhauling looms. There are several very good books still quite adequate in those realms.

We have made use of stroboscopic light in delving into those little-seen areas of loom performance—pick-ball bounce, binder-finger flutter, dagger action, box misalignment, etc. We include photographs of these actions, pictures made under the stroboscope inspection lighting. Ever really *see* what a slight change in box setting can do to the point of earliest protection? Ever watch a shuttle "hang" so close to the lay edge of a running loom that you want to dodge?

We also have made use of another device that simply cannot go wrong—experience. Master weavers have checked out our script and have added their own variations. We made the selection so the master weavers would represent four fabric areas that just about encompass the bulk of day-to-day output. You will be reading the techniques used by men who produce filament synthetics, print cloths, cotton garment goods, and industrial fabrics of several grades, including the light number ducks.

Where such would do, we have written the script to cover a composite of all four types of weaving: where necessary we have written the techniques separately and have identified technique with fabric.

In doing this, we have tried to get the most information in the hands of the most people where we think it will do the most good. Under no circumstances do we present this series as a cure-all, a handbook tailored to fit any plant weaving any fabric anywhere. Most of it will have to be "fitted" to the local scene.

We have stayed within Draper's recommendations in matters of loom speeds, settings, etc., as far as situations permit. Any departures from these recommendations is the responsibility of TI's editors and will be explained as far as those things need be explained to weaving overseers.

Since we planned this work to be beneficial to both the experienced fixer and to the novice (who as yet is kept under strict guard while in the weave room), we have included step-by-step procedures to assist in establishing routines—most mill men refer to such guides as "breakdowns." They, too, have been given the acid test of experience and for the most part are composites. These, of course, will be tailored to suit the local requirement (the local boss).

Loom fixers represent so many extremes in temperament, ability, and outlook that it is impossible to describe the "average" one. But it is safe to assume that, could the average one be described adequately, he would at once appear a paradox, for:

With hands calloused enough to untie pine knots he makes loom adjustments a watch maker would have to admire:

He can make a loom draw pictures while the fixer is absent—most great artists have to be present while they paint their canvases:

He can make a loom start off at 90 mph and stop without slowing down:

He can make a 1000-pound loom put a 24″ shuttle through any window you can point out and into orbit, and he'll do it casually, too.

Furthermore, he considers his boss a harmless "jerk" who was made secondhand only to make room for a decent fixer, a fixer trained in the art of hitting a stuttering loom in the hopper with a 12-pound sledge. But he will quickly go looking for that same boss when he (the fixer) finds his own loom props beginning to sag.

And before we get down to the serious business of fixing a few million looms we dedicate this and each succeeding installment to

If the lay is kept properly aligned, then damage such as that in the above picture is easier stopped, for then one needs only to look for badly paralleled pickers (probably a low one on the shuttle end showing the damage) or troublesome parallel motions. A high end plate—one that makes the shuttle climb it as the shuttle leaves the race—will produce similar symptoms. A pattern such as that in the lower picture is usually traceable to a high screw head or a broken end plate on the battery side of loom. Damage to the shuttle top is usually traced readily to alignment, shedding, or poorly paralleled pickers. Each time a loom is brought to respond to a gauge setting, a few sources of trouble are removed, leaving better definition of symptoms and easier diagnosis. Thus, the lay alignment, properly maintained, not only reduces shuttle wear, but it makes it easier to find malfunctions in picking and shedding.

every loom fixer—good, bad, indifferent, real, or imagined—who has at any time been permitted to tote a tool kit.

Lay alignment

Symptoms of Misalignment. Wherever a shuttle is scrubbing the reed, flute-like patterns appear on the shuttle back. If a box plate is sorely out of line, or is loose, the shuttle may be worn to a pronounced taper at one end, caused by the shuttle back striking the box plate as the shuttle leaves the reed and starts into the box. Wear at the top of a shuttle may be from poor alignment in the lay end plates, pickers badly paralleled, warp interference—each fixer can name a few patterns of his own—a warped lay. . . .

Such wear patterns can be justified only if they are caused from equipment failure, from breakage. But, barring accidents, they can be prevented by periodic tests with reed square and long straight edge. The inspection frequency must be left to local management.

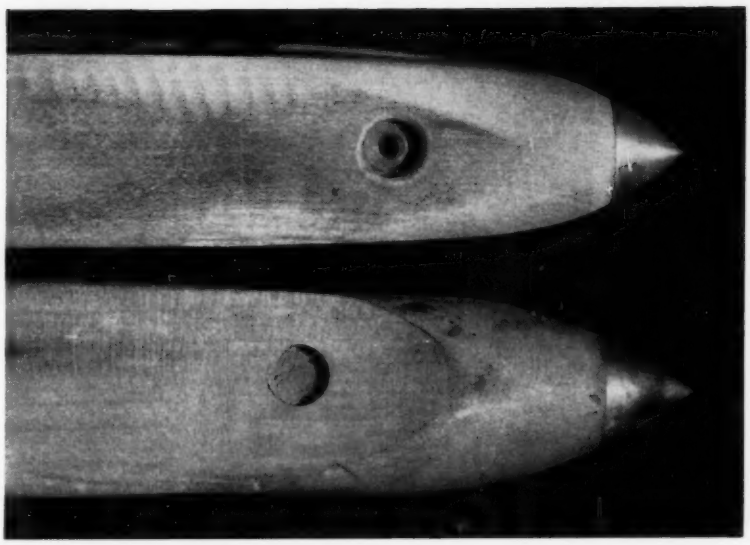
Naturally, it is easier to do an aligning job if the pattern is out of the loom, so most routine realignments are done while the warp is out or while the cloth is ready for doffing. Emergency repairs, however, can be and are made simply by dropping the harnesses so the sheds all rest on the shuttle race, laying the long straight edge along the reed atop the warp ends, and proceeding with the alignment. Cover the cloth left in the loom to protect it.

Test These Points for Alignment. Insert the long straight edge inside the boxes, jam it against the box backs, wide face down, and inspect the backs to see that they are snugly against the straight edge. While the straight edge is in this position, the reed should be no closer than 0.008″ and no farther than 0.016″ from the straight edge. This amounts to the thickness of one to two drop wires.

Turn the straight edge on its edge (there should be no cloth nor warp in the way of this) and let both ends of it rest on an end plate. At all points along the shuttle race, and on both end plates, the straight edge should touch. Looms that require a lay cover of felt or corduroy must be gauged to give a clearance equal to cover gauge less 0.010″ between shuttle race and straight edge. Use a feeler gauge to determine that distance.

Test for wind or twist in the lay by laying two short steel blocks—½″ x ½″ in cross section will do—across the lay ends and rest on these a length of angle iron long enough to span the shuttle race easily. Any "rock" present in the angle iron suggests the lay is twisted. The angle iron, or whatever rigid item is used to span the shuttle race, should possess at least one machined surface or side to assure its giving an accurate picture of "twist." Likewise, it must be rigid enough to resist twisting under its own weight.

If such is not available, then



A washboard wear pattern such as is on the top shuttle may be caused by reed or box back out of square, overhanging to scrub that portion of the shuttle (a similar pattern extending the length of the shuttle wall is a symptom of reed misalignment). Warp or twist in the lay will also produce a short pattern such as this. The bottom shuttle has been striking box plates that are set too far in front of the reed—the center of the shuttle wall was hardly worn—and is shaved away to a wedge shape.

the lay height gauge can be used. But this will require removing the battery so the gauge can be positioned at that end of the loom. It is placed in position with one end on the breast beam, one end on the middle horn of the loom side. Its center portion must then contact the lay end across the entire width of that loom part. The lay must be positioned at "correct" front center with the appropriate lay gauge if this test is to be valid.

(Continued next month)

42 South Carolina mills win safety awards

■ 42 SOUTH CAROLINA textile plants were honored recently for their safety records.

Plaques and certificates were awarded to the plants at the twenty-second South Carolina Accident Prevention Conference in Columbia, sponsored by the South Carolina Industrial Commission. The Textile Safety Contest is sponsored by the South Carolina Textile Manufacturers Association.

There were three groups in the safety contest, depending on the number of man-hours worked. Group I included plants with a million man-hours worked in the period covered by the contest; Group II, those of 500,000 to one million; Group III, those with less than 500,000 man-hours.

The SCTMA awarded plaques to the first two plants in each category. The Industrial Commission awarded certificates of safety to the first 10 in Groups I and II and to 22 in Group III. There were 20 entries in Group I, 40 in Group II, and 55 in Group III.

There were 32 plants which had no time-lost injuries during the contest period. The average of time-lost injuries per million man-hours in Group I was 2.64; in Group II it was 2.50, and in Group III it was 4.29. The average of all plants entered was 2.97 against a national textile average of 3.72.

The 3.72 rate gave textiles ranking as the sixth safest industry of the 40 listed by the National Safety Council. The average for all industries was 6.17 lost-time injuries per million man-hours.

Winners in the 1959 textile safety contest (with rate of injuries) follows:

GROUP I

	Mill	Injury Rate
1.	Drayton Mills, Spartanburg	.00
2.	J. P. Stevens & Co., Appleton Co., Anderson	.00
3.	J. P. Stevens & Co., Slater Plant	.00
4.	J. P. Stevens & Co., Victor Plant, Greer	.00
5.	Union-Buffalo Mills, Buffalo Plant	.65
6.	Winnsboro Mills, U. S. Rubber Co.	1.16
7.	J. P. Stevens & Co., Dunean Plant, Greenville	1.22
8.	Joanna Cotton Mills	1.25
9.	J. P. Stevens & Co., Clemson Plant	1.52
10.	Spartan Mills, Beaumont Division, Spartanburg	1.68

GROUP II

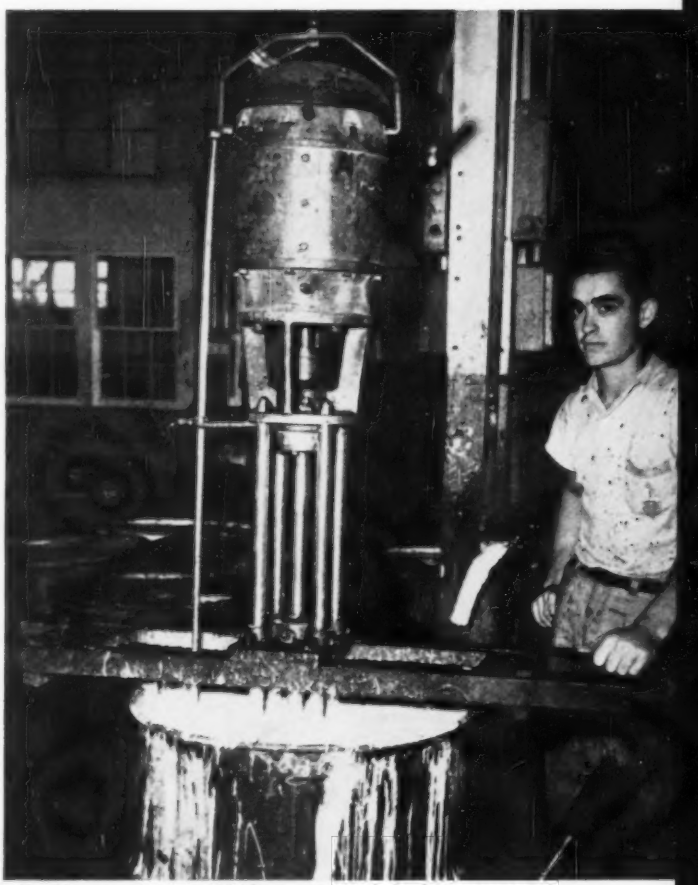
	Mill	Injury Rate
1.	J. P. Stevens & Co., Greer Plant	.00
2.	Greenwood Mills, Greenwood Plant	.00
3.	Clinton-Lydia Cotton Mills, Lydia Cotton Mills, Clinton	.00
4.	Deering, Milliken & Company, Inc., Laurens Mills	.00
5.	Woodside Mills, Simpsonville Plant	.00
6.	Kendall Mills, Pelzer-Upper Plant	.00
7.	Gaffney Manufacturing Co., Gaffney Plant	.68
8.	Greenwood Mills, Ninety Six Plant	.82
9.	Woodside Mills, Liberty Plant	.88
10.	J. P. Stevens & Co., Republic Plant #3, Great Falls	.90

GROUP III

	Mill	Injury Rate
1.	Woodside Mills, Easley Plant	.00
2.	J. P. Stevens & Co., Republic Plant #2, Great Falls	.00
3.	Arkwright Mills, Mill No. 1, Greenville	.00
4.	Reeves Brothers, Inc., Mills Mill No. 1, Greenville	.00
5.	Greenwood Mills, Mathews Plant No. 3, Greenwood	.00
6.	Abney Mills, Poinsett Plant, Greenville	.00
7.	J. P. Stevens & Co., Republic Plant #1, Great Falls	.00
8.	Graniteville Co., Vaucluse Division	.00
9.	Chicopee Manufacturing Corp., Walhalla Division	.00
10.	Reeves Brothers, Inc., Chesnee Division	.00
11.	Greenwood Mills, Harris Plant, Greenwood	.00
12.	Burlington Industries, Valley Falls Plant	.00
13.	Amerotron Company, Peerless Plant, Belton	.00
14.	Abney Mills, Panola Plant, Greenwood	.00
15.	Deering, Milliken & Company, Johnston	.00
16.	Arkwright Mills #2, Mill No. 2, Spartanburg	.00
17.	M. Lowenstein & Sons, Lyons Division, Anderson	.00
18.	Amerotron Company, Honea Path	.00
19.	Abney Mills, Ladlassie Plant, Anderson	.00
20.	Abney Mills, Rayon Plant, Greenville	.00
21.	Riegel Textile Corp., Fork Shoals Plant	.00
22.	Jonesville Products Co., Jonesville	.00

Printing with the fiber reactives

Brilliance and wetfastness by direct chemical reaction



The fiber reactives are soluble in water and simple to prepare. As thickeners, O/W emulsions or alginate gums are used. For emulsions of finest particle size and best stability, a high-speed, shear-type mixer is required. Pastes should be prepared on alkaline side.

Staff prepared Exclusive

ON THE WHOLE, print colorists regard a new color development with some skepticism. This attitude is not altogether unexpected because conditions in a print works place some harsh restrictions on colors. For one thing, color formulation and preparation must be simplified to a large degree, for it is impractical to make distinctions for varying behavior of colors belonging to the same class. Furthermore, styling invariably calls for mixtures of colors to make deviation in procedure undesirable. Thus, aside from the compromises that can be made in formulation, a color class must fall into an established color-shop routine.

In printing, the transfer of color to fabric with maximum color yield and definition is less dependent on color characteristics than it is on such factors as engraving, thickener, and the less definable skills of the printer. Nevertheless, if a new color class is to meet with wide success, its chemical nature must permit its use alongside other color classes —it must conform to standard conditions of printing, fixation, and after-treatment.

Aside from the conditions imposed in printing and processing, there are at least three additional requirements to consider: cost, fastness properties, and color aesthetics. In the final analysis, a new color development must offer tangible advantages if it is to assume a permanent place among color classes of established merit.

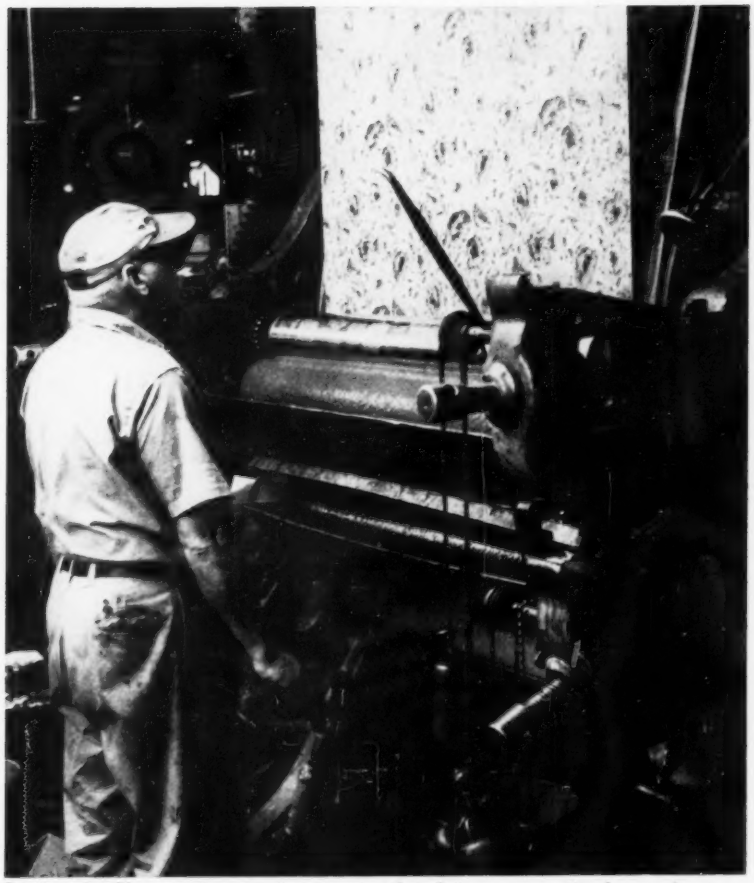
The most recent color development of particular interest to cotton printers is the fiber reactive group of dyes, which exemplify a new concept in the attachment of color to cellulose by direct chemical combination rather than by mechanical retention. The fiber reactives are also unique because their high brilliance is accompanied by wet fastness. These two properties are normally not associated together.

But to fully appreciate the status which the fiber reactives may ultimately assume, it might

This is the third in an exclusive series of articles on the fiber reactive dyes —their chemistry, applications, and uses. The first article, an over-all survey, appeared in TEXTILE INDUSTRIES for December, 1959, pages 71-73. The second, which described how one plant uses them in package dyeing, was in the same issue, pages 74-76. The final article will be a detailed discussion of dyeing with the fiber reactives.

Fiber reactive dyes

Third in a series



Printing the fiber reactives requires no special techniques—conventional procedures are used. The colors are easy to inspect because no color change takes place after printing. As a rule, the fiber reactives are used exclusively in a pattern, but they can be printed alongside other color classes, using a protective oxidizing agent in the paste formulation.

Steps in Printing the Fiber Reactive Dyes

1. Formulation and preparation of color and paste. Key ingredients are mild alkali and urea.

2. Printing.

3. Aging. Reactive dye groups react simultaneously with hydroxyl groups of cellulose and water under catalysis of mild alkali. No color change takes place.

4. Washing off. Removal of unfixed dye, product of reaction between dye and water, for best fastness properties.

be worthwhile to list the most important color classes for printing cotton. This list is quite impressive and by this time methods for applying the various color classes have been fully developed. Moreover, for most of them, formulation and techniques have not only been perfected for the direct style of printing but for discharge and resist printing as well.

The list, including general comments about application, fastness properties, and economics, is given in *Table 1*.

The number of color classes (including some not listed in the table) and the styles of printing which a print works may use will depend on the markets that are being served. A wide diversity in color application naturally calls for diversity in equipment and facilities. The more diversified plants are perhaps better equipped and organizationally more receptive to new developments. But equally as important as equipment and facilities is the need for sound appraisal of a new development, for regardless of its simplicity the job of putting it into practice still requires practical experimentation.

In this respect the fiber reactives are no exception, requiring laboratory and plant experimentation before they can be put into practice. However, they lend themselves favorably to application on print works equipment and possess advantages that are normally not associated with faster colors: They are soluble in water and relatively simple to prepare. In printing they offer ease of inspection, inasmuch as no further color change takes place. In aging, reaction between dye and cellulose takes place in a neutral steam atmosphere, requiring far less control of temperature and humidity than when applying vats.

Their disadvantage, aside from their high cost, lies in the removal of the unfixed portion of color—product of the side reaction between color and water. But this is not a universal problem. Many printing plants are equipped with efficient open-soaping ranges, or are inclined to soap in the rope form, recognizing this as the most effective soaping method. Some plants, however, are reluctant to reduce speeds of open-soaping ranges (which have been designed for higher speeds) and only by sheer necessity resort to additional soaping. In such plants, color removal to the degree required

TABLE 1. Important Color Classes for Printing Cotton Goods

Color Class	Aging	After-Treatment	Comments
Vat	In neutral steam; long aging required.	Oxidation and thorough soaping.	Best in all-around fastness properties. Cost of formulation high. Require sound technical supervision.
Vat Ester	In acid or neutral steam, depending on formulation.	Can also be formulated for wet development. Require conventional soaping.	Used mostly in light shades. High in cost. Can be printed alongside other color classes. Require good working knowledge of individual colors and sound formulation for best results.
Azoic	Developed rapidly in neutral or acid steam, depending on type.	Open soaping sufficient.	Moderate in cost, easy to apply, and of satisfactory fastness. Used in high strengths. Some shades are of high brilliance. Can be printed alongside other color classes.
Pigments (O/W and W/O)	In acid or neutral steam, depending on color classes in pattern.	For best fastness, require baking at high temperature. New reactive binder and catalyst systems reduce time and temperature required to set prints. Little or no soaping required.	Low in cost. Replace vats in many cases, at low and medium concentrations particularly. Can be printed alongside other color classes.
Aniline Black	Neutral	Oxidation and thorough soaping required.	An excellent black of good fastness, the most economical available. Requires experience for uniform results in volume printing. Can be printed alongside other color classes, including vats.
Direct	Neutral or cottage steaming.	Light soaping, and fixation with resin-type fixatives, or with cationic softener fixatives.	Most economical class for obtaining full ranges of shades, except blacks. Light and wash fastness not as good as all foregoing classes. Compatible only with pigments and neutral azoics.

can be a problem.

At the outset it should be emphasized that the fiber reactives are divided into three commercial groups, marketed under the trademarks Procion, Cibacron, and Remazol. (A fourth group of fiber reactives, with the trademark Verofix, was introduced toward the end of 1959, but no technical data concerning them were available at the time of this writing.) It should be pointed out, too, that the Remazols as a class are chemically different from the Procions and the Cibacrons, which were the first fiber reactives to be marketed. The Remazols have been described in the literature (1)* as vinyl-sulfon reactive dyestuffs, while the Procions of the cold-dyeing type are referred to as cyanuric-dichloride reactives, and the Procion H and Cibacron types as cyanuric-monochloride reactives.

In application, however, all three commercial groups are governed by an identical principle: The reactive dye groups, possessing a strong attraction for hydroxyl groups, react simultaneously with the hydroxyl groups of cellulose and with water in the presence of a mild alkali. The cyanuric chlorides form an ester linkage with cellulose while the vinyl sulfons form an ether linkage.

In this series of articles no attempt will be made to discuss the relation of dyestuff behavior and properties to chemical structure, or to the kind of linkage existing between dyestuff and cellulose. No doubt chemical structure and linkage are of practical significance in a dyestuff's behavior during application and in its fastness properties. But the practical colorist is far more interested in learning whether colors can be placed into a group, with compromises in color formulation if necessary, in order that a routine

*Reference at the end of this article.

may be established for all.

In time, the colorist learns about dyestuff behavior through practical application, and about fastness properties through testing. Together with other considerations, including cost, these will serve as a basis for his color selection.

It has been demonstrated that all three commercial brands exhibit similar behavior in application on conventional printing equipment. Nevertheless, it can be dangerous to generalize about the fiber reactives, or for that matter about any one of the chemical groups. This statement of fact does not apply to fiber reactives alone. For virtually every color class contains colors which vary in fastness properties, behavior, and cost. The vats and vat esters are notable examples. Among the former class are those which cannot be formulated by the alkali-carbonate method; and as everyone knows, not all vats are of outstanding fastness. The vat esters, on the other hand, are of varying behavior in aging, exhibiting slower and faster rates of "splitting."

Since the fiber reactives came into use in 1956, the range of colors has been gradually expanding. But colors of higher fastness ratings are naturally given a greater preference, and around them most patterns are created. Print stylists were almost unanimous in creating flowery patterns where brilliance is a most desirable quality.

Perhaps typical of the more elaborate creations observed last spring was a flowery pattern comprised of six fiber reactive colors. It might be interesting to list them here, as they were present in formulation, to indicate the generally high concentrations at which fiber reactives are used:

8 oz/gal black*
10 oz/gal fuchsia
9 oz/gal orange
3½ oz/gal rose
9 oz/gal green
4 oz/gal gold
*Some colorists go as high as 13 oz/gal

This pattern was printed on a mercerized fabric which then received a resin treatment. In most patterns observed, blues, pinks, and royal and bluish-reds were quite prominent, presumably because of their higher fastness ratings. In some patterns, fiber reactives were present alongside colors of a special azoic class, which can be developed by neutral aging. Many patterns contained shades which were mixtures of colors belonging to the three groups—Procion H, Cibacron, and Remazol—indicating that similarities in behavior and in properties exist among them to a practical degree.

Color Formulation. Color and paste formulation for the fiber reactives present few problems to speak of, and preparation can become a simplified routine since conventional mixing equipment and facilities can be used. Color formulation is facilitated because the fiber reactives are soluble in water and require only a few basic ingredients. For paste formulation many commercial thickeners are available, principally of the emulsion and alginate types. From these a print works can select the type which best meets its particular requirements.

A general formulation suitable for a mixture of all three commercially available fiber reactives is as follows:

Color
Water
Urea
Sodium bicarbonate
Sodium m-nitro benzenesulfonate*
Thickener

Urea plays a versatile role, improving color solubility and paste stability and also promoting fixation. The amount required to suit individual requirements is easily determined by practical experimentation. Sodium bicarbonate plays the key role in the reaction of color and cellulose. By breaking down into alkali (soda ash) at the high temperatures of aging, it serves as an effective catalyst in the reaction. Theoretically, the chemical reaction can occur without alkali under prolonged steaming or storage. But its use is necessary to meet the practical conditions of modern aging which call for high speeds.

*Commercially available as Ludigol and Sitol.

Sodium m-nitro benzenesulfonate plays the role of a protective oxidizing agent. Its purpose, stated in another way, is to prevent color reduction during aging. Its use is particularly recommended in pastel shade formulations. The cause of the color reduction phenomenon is not clearly understood and its occurrence is not a regular thing. But it can occur, and a safety measure in the form of a protective oxidizing agent is required.

Printing Thickeners. In formulating colors of any class, no single ingredient can arouse more discussion among colorists than the thickening agent. It is such a critical factor in roller printing, and its required role is such a versatile one, that its selection must be done with extreme care, based upon practical printing trials.

At the time the fiber reactives were introduced, a trend was already under way toward using thickeners which could be more easily removed from the fabric. The practicality of utilizing emulsions as "false" thickeners had been demonstrated over many years in the application of pigment printing vehicles. While both W/O and O/W emulsions are common in pigment printing, an O/W emulsion offers an inherent advantage where rapid removal of thickener is desirable, since the water is present in the outer phase of the emulsion. In addition, the emulsifier functions as a detergent in rinsing.

Thus the O/W emulsion has found some use in vat printing, offering several advantages over conventional thickeners. It yields softer prints, facilitates aging, and requires far less soaping time.

Meanwhile, the cold-swelling, alginate gums, offering ease of preparation and removal, have found a principal use as thickeners for the azoics. Both these thickener types have been adapted for the fiber reactives, but ease of removal is not an only reason for their use. Starches and thickeners which possess hydroxyl groups cannot be used as they reduce color yield by reacting with the dye. The selection of thick-

eners has therefore been limited.

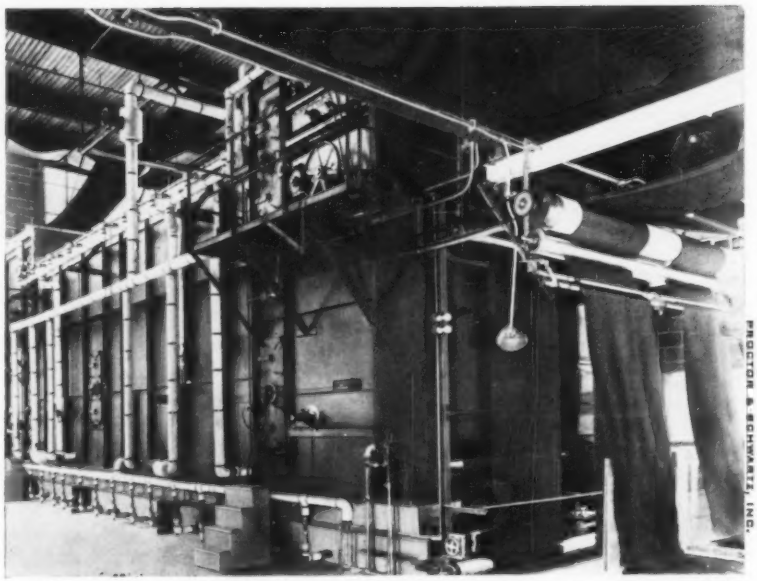
Both alginate and emulsion thickeners are in use for the fiber reactives, as a survey of printing plants revealed. However, in each plant there was a preference for one type or the other, with a larger number using emulsions. But not all emulsion thickeners available commercially were found to perform equally or to produce equal results. This is understandable and might well be due to the longer experience of certain manufacturers in formulating print pastes.

Perhaps the most important function of a paste is to achieve a proper balance between color yield and penetration. Besides this, a paste should possess proper "length," and should furnish well without breaking down. After printing and color fixation, it no longer serves a useful function and for reasons of economy should be easily removable.

Aside from serving as a color carrier, a paste must contribute toward achieving the desired effect on the fabric. Since patterns vary in complexity of design, they require varying properties in a paste. And no amount of printing skill can overcome certain deficiencies in a paste.

For most of today's pattern requirements, pantograph and photoengraved rollers are used. For both types of engraving the emulsion thickeners are preferred, according to one printing technician who has also had experience in using alginates for printing fiber reactives. The emulsion thickeners "hold" better to the etched surfaces of a photoengraved roller and produce a sharper mark. The alginates, on the other hand, cause pinniness at increased speeds, particularly on larger printed areas and blotches. If deep pantograph engravings are used, the alginates are satisfactory but not for all pattern requirements. What is essentially called for in printing with fiber reactives is a paste of "short" body which will promote good doctoring.

These desirable features of the emulsion thickeners were brought out by several plant colorists. In one plant, a colorist found that the emulsion thickener he used was superior in running properties to any other thickener in his plant, barring no color class. As advantages he gave better "mileage" and elimination of streaks, along with sharpness of mark and cleanliness of color. A printer in another plant claimed similar advantages for emulsions but not to such exacting detail. He gave color yield and appearance as the principal advantages of the emulsion thickener he used.



The fiber reactives require aging in a neutral steam atmosphere, as in a vat ager of the type shown above; the prints must be on the alkaline side for the reaction to take place. Sodium bicarbonate, included in the paste formulation, breaks down into alkali to set off the simultaneous reactions between dyestuff and cellulose and between dyestuff and water.

For essentially the same reasons, an emulsion thickener was found superior to alginate in a printing on a corduroy fabric where coverage exceeded 100%. The emulsion produced a sharper mark and doctored well.

Two plants, however, held opposite views about thickeners and preferred alginates. One of these in fact was experimenting with products of other types in an effort to find an improved thickener combination. Both plants had substantial experience in printing with emulsion pigments; therefore, they had the necessary facilities and "know-how" for preparing and using emulsions.

No doubt selection of thickener in each plant was based on observed results in printing, together with an assessment of other practical factors. From a practical standpoint, the views taken are correct. And they serve to point out that evaluation of thickeners cannot be carried out on a strictly scientific basis. There are too many variables in color preparation, and in printing particularly, to allow evaluation under so-called "controlled" conditions. Besides, printing requirements vary among plants, according to the type of work being done; hence, some latitude in paste properties is not always critical.

Without doubt, the preparation of an alginate gum requires less supervisory attention. In fact, its preparation is simple and can be done on conventional mixing equipment. But some time is required for proper swelling of gum. This requirement, however, is by no means a disadvantage. In preparing emulsions, on the other hand, more competent supervision is required for consistently uniform results. For emulsions of finest particle size and maximum stability, a high-speed, shear-type mixer is needed. The attention that emulsions require in preparation, however, seems hardly a sound reason for shunning them, in view of the fact that emulsion printing systems have been in use for many years. Besides, they are

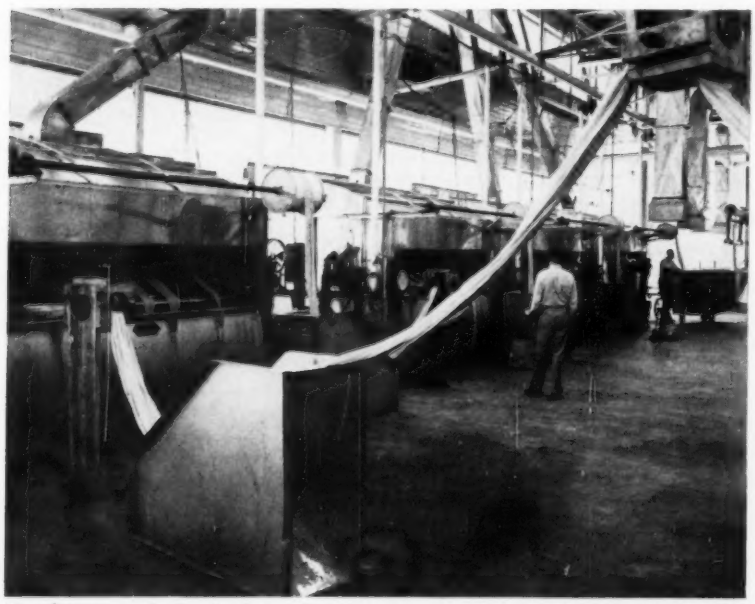
quick to prepare and are ready for immediate use.

It would serve no practical purpose to elaborate on thickener formulations. The preparation of alginates is already well known, and thickeners of the emulsion type, as available or as they may be made up by a plant, vary somewhat in composition. But one distinguishing factor in the composition of alginates and emulsions is apparent. It is of significance, or at least appears to be, in the reaction between dyestuff and hydroxyl groups. An alginate gum contains approximately 97% water, excluding dyestuff and ingredients; while an emulsion thickener contains approximately 50% water. The latter figure may not be truly representative of all emulsions. But it would appear that on the basis of reduced water content, emulsions would produce a higher color yield.

Another factor comes into evidence in appraising alginates and emulsions. It centers around the one outstanding property that they have in common—ease of removal from fabric. It is doubtful if this is of real advantage in the case of fiber reactives, which require efficient soaping and rinsing for complete removal of unreacted dye. It is also doubtful if any difference in ease of removal could be detected between the two types.

Selection of thickener among the plants surveyed was evidently done with particular requirements in view, and on the basis of the importance attached to certain advantages of each thickener. To give an example of this, one plant which had a long history in the use of alginates for other color classes has been reluctant to change thickeners. First, because its printing requirements for definition and appearance of print are being met; and second, because it has efficient facilities for the preparation and handling of this gum.

From an economic standpoint, emulsion thickeners are more expensive. But this could not be a determining factor in evaluation, in view of the foregoing discussion. It would appear that in the evaluation of thickeners for the fiber reactives, advantages in color yield, definition, and running properties would rank high, followed by advantages in paste preparation. What advantages may be apparent in one thickener over the other in processing after printing appear to be of less importance.



Complete removal of unfixed dye (product of reaction between dyestuff and water) is essential for best fastness properties. Soaping in a rope-type soaper (above) or in the beck is most effective, since it provides for a longer cycle, better control of temperature, and a more vigorous agitation of the fabric. Color loss is estimated to range from 20% to 40%.

Printing, Aging, Soaping. To list color formulations with ingredients in precise concentration could not serve as a universal standard of procedure. Color formulations are best determined by practical experimentation, taking into consideration, among other factors, cloth preparation, pH, and the requirements of individual colors, for which the manufacturer can make recommendations. Nevertheless, formulations must be sound to get best results in fixation. Control of moisture is said to be important in the reaction and is influenced by formulation.

Some of the outstanding advantages of fiber reactives come into evidence during printing and aging. The colors afford easy inspection during printing, and require far less control of temperature, time, and humidity in aging than is the case with vats. The presence of air in the ager is not a critical factor. The colors need only be on the alkaline side and must be aged in a neutral steam atmosphere. The time of aging can vary from 3 to 10 minutes. One print works has established the time at 4-5 minutes. The colors are very sensitive to acids and will not properly fix unless definitely on the alkaline side.

Color fixation can also be accomplished in conventional curing equipment; requiring a higher concentration of urea, however. But at least one colorist's experience with this method did not prove satisfactory. By far the most widely used method is to age conventionally. There is an advantage in using the former method of fixation when pigments are present in the pattern.

While printing and aging require no deviations from normal print works procedures, complete removal of the unfixed color requires a longer soaping cycle. Needless to mention, complete removal is essential if bleeding in finishing is to be avoided, and if best fastness properties are to be achieved.

The problem of color removal centers around two factors: First, the amount of unfixed color is large, representing a color loss estimated to range between 20-

40%, depending on dyestuff and depth of shade. Second, though the unfixed color is readily soluble, it requires a longer soaping cycle with mechanical action of fabric at higher temperatures.

Some plants are reluctant to reduce speeds and are even more reluctant to resort to rope soaping for reasons of economy. This reluctance is in part understandable in view of trends toward higher speeds. It is not uncommon for open soaping ranges to operate at speeds of 100-125 yards per minute, depending on fabric and color classes used. But at these high speeds, the time of soaping does not exceed one minute, and at reduced speeds probably would not reach two minutes.

The trend to higher speeds came about with the acceptance of pigment printing systems, which to a great extent have replaced vats. Besides requiring little if any soaping, pigments offer flexibility in use. They can be printed alongside aniline black and azoic colors, just to mention one popular combination, for which open soaping will suffice.

As an interesting sidelight on soaping, in one print works some years ago, vat prints were soaped only in open width form, though not at today's higher speeds. The first passage consisted of color oxidation followed by thorough rinsing and soaping. After desizing in a separate operation, the second passage consisted of rinsing the solubilized starches followed by soaping. This soaping range, incidentally, was equipped with efficient water sprays and numerous reels located below the liquor level for increased mechanical action and more efficient rinsing. Essentially this is what is required for the fiber reactives.

Soaping procedures for the fiber reactives vary somewhat among plants according to equipment available. But in all cases, plants recognized rope soaping as the most effective method. In one plant the time of rope soaping reached about 45 minutes. The key to complete removal of unfixed color lies in using a high temperature rather than in using a special "soap" formulation. In fact, hot water, together with mechanical action over a prolonged period of time, appears to be most effective. These conditions are difficult to meet in an open soaping range. Even a temperature of 150-160 F is difficult to maintain with constant replenishment of soaping and rinsing liquors.

The problem of staining white grounds is greater in open soaping. But it is claimed that efficient rinsing in the early stages of soaping—to remove soda ash formed during aging — is of much help. Toward this end, power sprays are coming into use. These are specially designed to force water through the fabric under the pressure of a pump.

(The remainder of this discussion on printing with fiber reactive dyes will appear in the February issue.—The Editors)

Reference

1. Sommer, E. P., "Remazol Colors, A Chemically New System of Fiber Reactive Dyestuffs," *Am. Dyestuff Reptr.* 47, 895-899 (1958).

Trademarks

Procion — Arnold, Hoffman & Co., Inc.
Procion H — Arnold, Hoffman & Co., Inc.
Cibacron — Ciba Co., Inc.
Remazol — Carbic-Hoechst Corp.
Verofix — Verona Dyestuffs
Ludigol — General Aniline & Film Corp.
Sitol — E. I. du Pont de Nemours & Co., Inc.

60% increase in production per man-hour expected in next 10 years

■ "ALTHOUGH we do not expect any spectacular technological breakthrough in the field of research and development, we do expect the production per textile man-hour to increase 60 per cent during the next ten years," said Robert A. Hudson, administrative engineer of the Saco-Lowell Research and Development Center in Clemson, S. C., recently while addressing the Southern Textile Methods and Standards Association.

Development of the MagneDraft system for weighting top rolls on spinning frames (T. I. for Nov., 1958, p. 183) is a typical result of research to provide machines which are easier to operate and keep clean. Note in this photo made in Seco-Lowell's Research and Development Center some of the highly sensitive electronic instruments used to develop this equipment.

Revealing that at present more than 90 per cent of his company's textile machinery research and development effort is directed toward the improvement and redesign of yarn preparatory machines, Mr. Hudson said:

"It appears that double apron drafting systems have established themselves. New arrangements are continually appearing, and in order to improve quality and flexibility the search goes on for the ideal system. . . .

"Perhaps the one trend having the most effect on yarn quality is the obvious one toward increased precision. The tempo of progress is set by our ability to measure. . . . Such instruments as electronic evenness testers have come into daily use, and with these better tools for measuring have come investigations into such things as the effect of roll concentricity on uniformity. . . . Now we can not only measure the magni-

Continued on page 121

A. M. Moore

CARDING HIGHLIGHTED THIS STA MEETING

T. B. Stevens

Staff report

PROBLEMS in opening through weaving were discussed at the fall meeting of the Eastern Carolina Division of the Southern Textile Association, in Raleigh, N. C. T. B. Stevens of Erwin Mills presided at the meeting.

Carding practices were given primary consideration in a forum conducted by A. M. (Lonnie) Moore of Erwin Mills. Among the subjects getting considerable attention and interest was a spool-type bobbin for use on roving frames to increase package size by eliminating the tapered build on the more common type of bobbin.

It was explained that each flyer has to be set at a certain height because of the variation in bolsters and step rails (manufacturing tolerances), wear of bobbin gears, and other variables. When spool-type bobbins are used, an adjustable step on each spindle permits setting the correct height to assure proper build.

An experiment was described in which a bobbin accommodating 38 ounces of stock was converted to accept 100 ounces in 12 x 7 size on combed work. The machine ran 77 bobbins and had only one break-back during the run. Cause of the break-back was not determined but it was located midway in the bobbin. Running time was increased from 2½ hours to 5 hours and 20 minutes.

It was pointed out that once the traverse is properly set, there is no need for further change until wear is evident or a change in hank roving is made.

Either flyer lead or bobbin lead may be used with the spool-type bobbin but flyer lead is usually preferred. The doffer does not have to be so careful in handling the spool-type bobbins to prevent damage and sloughing off but handling the different package configuration is slightly awkward at first.

Tension on the package is easily adjustable, and uniformity of yarn remained unaltered in tests conducted so far. Test instruments do not distinguish stock at the ends of the spool-type bobbin from other areas on the wind. No increase in twist multiple was needed or used on a frame operated at the same speeds as on common bobbins. There is a slight increase in the power requirements due to the considerable increase in the weight of the package and the over-all load on the frame.

The Upsheen method of combing was discussed; with it, carded mills are finding high-production, low-noil combing a profitable way to make high-grade yarns from low-grade cotton. (See TI for August, 1959, p. 119.)

IN REVIEWING the causes of variation in card sliver—cloudy webs and neps—the following observations were set forth, assuming the best possible picker laps were used:

To prevent common defects in carding:

(1) Set coiler gears properly and keep them clean.

(2) Keep feed roll bearings in good condition.

(3) Remove feed roll weights or springs and bolt down the roll securely to prevent lumps or chokes from getting into the card.

One mill removed feed roll springs and bolted down the bearings securely with good results for the past year.

Another mill secured the bearings with bolts and used lock washers. The bolts were tightened enough to close the washers in order to get a uniform setting. This mill reported no trouble with chokes or otherwise on 250 cards. The arrangement is credited with saving both card cloth-

ing and licker-in.

(4) Replace worn trumpets without delay.

(5) Replace worn calender rolls without delay.

(6) Excessive draft causes trouble.

(7) Excessive air pressure in the card causes trouble.

(8) Dirty and dull cards and clothing should be remedied.

(9) Poor card settings should be fixed.

(10) Using cotton of poor characteristics should be avoided.

Most mills reported checking trumpets for wear every 4-6 months, whether or not case-hardened trumpets are used.

IN DISCUSSING metallic card clothing, one mill man related his experience with it on 250 cards over a period of 18 months and indicated decisive advantages were gained.

No grinding has been necessary to date, and there has been no loading observed on the cards. Although it is not required, closer settings can be maintained on the card.

Lint accumulates around the front of the card, increasing the amount of cleaning needed in this area. The mill cards at 9-18 pounds per hour, and the cards are set at the same scheduled time they were formerly ground.

Break factor remained the same while sliver uniformity improved and nep count decreased. All new bearings and comb blades were installed on the cards at the time the metallic clothing was put on, it was explained. A 25% reduction in strips was achieved also.

Another mill reported getting a 50% reduction in neps while increasing production about 35% upon installing metallic card clothing.

At the meeting *Jessie Boyce* and *Gilbert Mays* of Erwin Mills were elected as board members of STA for 30-month terms.

Machine checks wash-wear fabric performance, eliminating human element

■ DEVELOPMENT of an electronic test instrument which rates the appearance of wash-and-wear fabrics with an "electric eye" and thus makes possible an exact wash-and-wear performance standard has been reported by Robert M. Dowling, vice-president of Cluett, Peabody & Co., Inc., who heads the company's Sanforized Division.

Called a Smoothness Evaluator, the instrument is the central feature of a new wash-and-wear fabrics quality control program which is similar to the firm's fabric shrinkage control program for textile manufacturers. [For description of the wash-and-wear quality control program, see the "New Product Parade" in this issue.—The Editors.]

"Good appearance after washing is the distinguishing characteristic of a wash-and-wear fabric," Mr. Dowling stated. "But up to the present time, the only means of measuring appearance has been human judgment. The new Smoothness Evaluator, measuring electronically, leaves no room for the vagaries of the human eye. Test results are accurate and reproducible, from test to test and from plant to plant."

Operation of the Smoothness Evaluator is discussed by Mr. Dowling (left) and Ben A. Alford, director of licensee services.

How It Operates. While demonstrating the instrument, Mr. Dowling explained its operation as follows:

The instrument scans a "profile" of the fabric sample with a beam of light. Variations from absolute smoothness produced by wrinkles are translated into electrical current and computed in terms of volts.

To evaluate the appearance of a fabric, a 16"-square sample is first prepared by means of a specified washing procedure and hung to dry. The sample is then placed on the sample-holding cylinder, and the traverse mechanism operated so that the sample passes by the light source. Each sample is scanned in 16 positions (eight in the warp direction and eight in the filling direction).

The reading shown on the read-out meter at this point represents a value which is the sum of both the wrinkles in the fabric and its construction and individual surface characteristics.

The sample on the cylinder is then stretched with a suitable clamping device so that all wrinkles are removed. It is again passed before the light source and scanned in eight positions (four warpwise and four fillingwise).

A second reading is taken on the read-out meter, and this reading establishes a value for the fabric's construction and surface characteristics *minus* wrinkles. The difference between the first and the second reading is a precise measurement of the degree of wrinkling.

Answer to some sizing problems

Improved oxidized starches give transparent size with no setback

by Earl G. King
and Gordon Wood
Corn Products Sales Co.
Exclusive

OXIDIZED starches are recognized as staples in the textile manufacturing industry and are used in the warp sizing of carded and combed cottons and spun synthetics.

Combed-cotton weaving mills, employing yarn numbers as fine as 80s singles, must use a warp size that will be heavy enough to adequately lay the long fiber present in their long staple stock and yet not be so thick as to cause "stuck ends" or an unnecessary number of ends out of lease. The amount of solids, viscosity, and pick-up will vary with the yarn numbers, construction of the fabric, squeeze roll pressures, and slasher speeds.

Weaving mills, particularly those weaving predyed yarn, like oxidized starches because of the lack of color masking afforded them by the more transparent films characteristic of these products. Corn starches have a high inherent binding power and have been adopted by the textile industry because of this factor. Modifications have been necessary, however, to obtain a lower viscosity as well as a more transparent film in formulations requiring higher total solids.

In recent years considerable emphasis has been placed on the development of such starch derivatives as the hydroxyethyl, cationic, and acetate ester modifications. All of this effort has been directed at improved performance over conventionally modified starches, particularly with respect to film forming, adhesive, and noncongealing properties.

Our program of investigation of chlorinated starch performance and manufacturing techniques has resulted in a new series of oxidized starches, significantly different from the chlorinated starches formerly manufactured. Improved oxidation has been achieved, with no sacrifice of viscosity and strength properties. Trade acceptance during the past year has confirmed the value of the development emphasis on these starches.

Oxidation Methods. Any starch modification must have a purpose, and the purpose of oxidation is primarily to achieve an improvement in film-forming and viscosity characteristics of regular thick boiling starch. While oxidation with alkaline hypochlorite has long been an effective means of reducing the normal congealing tendency of corn starch, the problem of attaining optimal oxidation commensurate with desirable viscosity levels has always been with us. The oxidation should be as uniform as possible, so that every starch molecule is modified to the same desired degree. If some of the starch is over-oxidized and some under-oxidized, the resulting product may have the desired viscosity but will show undesirable setback, poor clarity, and impaired film properties.

Hypochlorite oxidation, to the extent necessary for practical advantage to the textile industry, is always accompanied by a thinning reaction or viscosity reduction. Most users, and most manufacturers as well, think of the various available grades of oxidized starches in terms of the viscosity differences between them.

This distinction certainly depends on one's point of view: The textile manufacturer weaving low-numbered yarns in a light construction fabric will require a warp size of relatively low viscosity and low solids. His evaluation of a starch is considerably different from that of a textile manufacturer weaving high-numbered yarns in a fabric with a high sley and tight construction. The latter needs a size with high solids and high viscosity which imparts a finish that will insure maximum abrasion resistance and strength to his yarns.

In our process, sodium hypochlorite is added automatically to regular starch. Since the composition of the oxidizing agent is of great importance to the reaction, this composition is rigidly controlled both with respect to chlorine content and excess alkalinity.

The amount of hypochlorite used is dependent on the viscosity desired in the finished product, with the lower viscosity starches requiring significantly greater chemical treatment than the thicker oxidized grades.

When the reaction of starch and hypochlorite has terminated, the system is neutralized, thoroughly washed and dried. In addition to the viscosity measurements for quality control, a carboxyl determination is made to insure the effectiveness of the oxidation.

This analytical technique is based on the transformation of some of the hydroxyl groups, so prominent in the starch molecule, to carboxyl groups. The analysis for carboxyl can be paired with the viscosity measurement to assure effectiveness of the oxidation treatment.

Effects of Oxidation. The most important effect of maximum oxidation for a given viscosity is in the setback or gelling tendencies of the starch. This property is of extreme importance in the sizing of certain spun rayon yarns

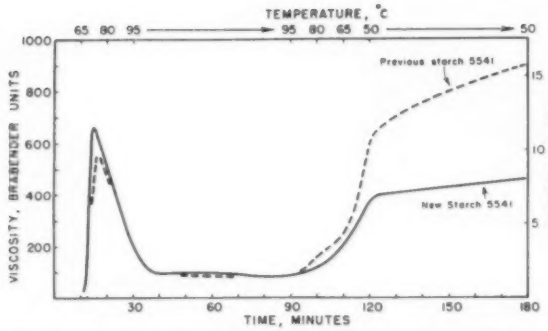


Figure 1. Brabender curves of new starch 5541 and comparable previous oxidized starch at concentration of 80 gm/500 ml of slurry.

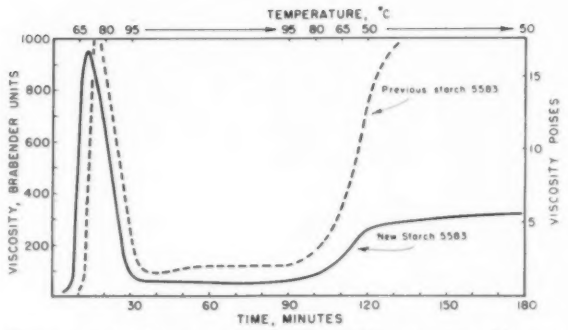


Figure 2. Brabender curves of new starch 5583 and comparable previous oxidized starch at concentration of 140 gm/500 ml of slurry.

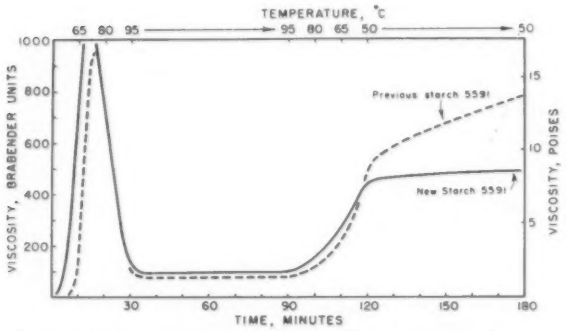


Figure 3. Brabender curves of new starch 5591 and comparable previous oxidized starch at concentration of 175 gm/500 ml of slurry.

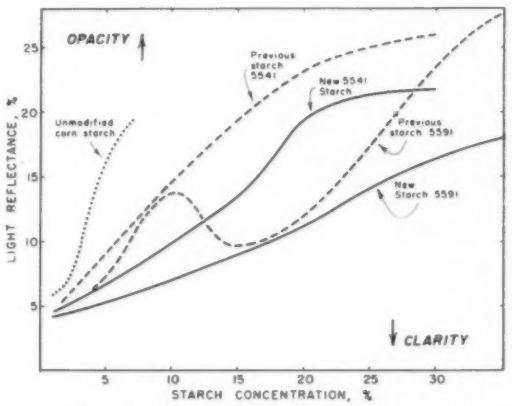


Figure 4. Paste reflectance of various new starches (solid lines) compared with analogous previous oxidized products (dashed lines).

which have a heat sensitivity characteristic. A higher oxidation level means improved film forming ability and greater binding power, while a lower gelatinization temperature allows the operator to apply the size at a temperature which is not harmful to the heat-sensitive yarns.

In addition to viscosity, gelatinization temperatures and paste transparency are also affected by oxidation levels, and will be noticeably more in the preparation of the starch pastes than in the application of the finished product. The lowered gelatinization temperature and increased paste clarity are both indicative of more uniform and more effective modification of the starch molecule; a paste of high clarity represents maximum dispersion of the starch and the absence of insoluble particles. Such a paste will give a smooth, clear film, having optimum continuity and tenacity.

Probably of greatest significance in the achievement of higher oxidation levels is the fact that this is accomplished without extensive deterioration of the starch with respect to viscosity. Changes in starch behavior are much easier to achieve if there is no concern as to the viscosity of the finished starch, for greater modification is usually accompanied by greater viscosity and strength loss.

Gelatinization Temperatures: Starches consist of minute cells or granules, which start to swell and dissolve when heated in water medium beyond a certain critical temperature. Actually, all the granules do not swell at the same point, but over a range of temperature (e.g., 62 - 72 C for unmodified corn starch).

This so-called gelatinization range of the starch is determined on a heated microscope stage by a recently published method (1)[1]. The following tabulation shows the decreased gelatinization range obtained with the new starches, as compared with the previous hypochlorite-oxidized starches of comparable viscosity grade:

New Starches	Previous Products
54.5 - 72.5	61.5 - 75
54 - 70	60 - 74.5
52 - 68.5	58.5 - 74

This lowered gelatinization temperature means that the starch will cook more easily and quickly to give a completely dispersed paste. This added insurance of thorough starch pasting can be of great importance in slasher rooms where time consumed in size preparation is a factor. For instance, a starch that requires a thirty-minute boil as a cooking time will mean a saving of at least an hour on every kettle of size prepared. The new starches will reach proper viscosity after a thirty-minute boil, whereas conventional starches may require as much as ninety minutes at a boil before they are ready for the size box.

[1]See references at the end of this article.

Setback: One of the best methods for evaluating the viscosity of starch products is by use of the Brabender recording viscometer. This instrument permits a starch paste to be heated at a uniformly increasing temperature, held at 95 C for an hour, then cooled to 50 C and held for an hour. A recent publication (2) describes a system of classification of starches by the graphical analysis of their Brabender viscosity curves.

Figs. 1-3 show the cooking and cooling curves of three of the new starches, compared with comparable samples of previous hypochlorite-oxidized starches. In each case, the pasting temperature (i.e., the point at which the viscosity starts to rise) is reduced, again indicative of easier cooking. Even more important, the cooked pastes of the new starches may be held at 50 C with very little thickening or setback, as compared with the previous products.

This setback is probably due to starch substance which was not fully oxidized, and which therefore imparted some of the retrogradation tendencies of the original unmodified corn starch. Hence it appears that the new starches are more uniformly converted than was possible by older processes of oxidation.

The improvement in non-congealing characteristics is directly related to slashing operations where "hard size" and "roll marks" are a problem. Starches with lower gelatinization temperatures will not set up and form streaks or squeeze roll marks of hard size when the slasher is stopped for leasing or doffing.

Paste Transparency: The oxidized starches have long been noted for the transparency of their pastes and films. This transparency represents maximum dispersion of the starch substance, to give solutions which are free from insoluble particles of retrograded starch, or swollen but undissolved starch granules. The transparency of a starch paste is inversely related to the amount of light "bounced back" to the observer's eye, and a reflectance technique has therefore been used to compare the relative transparencies of various oxidized starches.

In *Fig. 4* is shown the percentage reflectance plotted against starch paste concentration. The new starches have substantially better transparency (i.e., lower reflectance) than the corresponding older products. One of the older products gives a peculiar hump in its curve at 10 per cent concentration. This is attributed to under-oxidized starch which tends to retrograde and opacify the paste.

Clarity is a definite indication of film continuity and strength. More vivid colors are the outstanding result of these improved film properties.

While considerable progress has already been made in this work with the oxidized starches, there is evidence that further improvement is still possible.

References

1. *Anal. Chem.* **28**, 382 (1956)
2. *Cereal Chem.* **34**, 141 (1957)

Combed yarn quality improvement program

■ A QUALITY audit laboratory devoted exclusively to servicing members of the Combed Yarn Spinners Association (CYSA) is being established in North Carolina State College's School of Textiles. Full operation is expected to begin this month.

The two-year program announced by Dean Malcolm E. Campbell will require $25,000 worth of new equipment and the services of five full-time trained technicians and samplers.

Going beyond the routine daily production tests usually made at yarn mills, the new CYSA program is designed to provide participants with a basis for long-term, general improvement. Reports submitted to the mills will make detailed "diagnoses," pinpointing problem areas and suggesting improvements in processing and use of machinery, Dean Campbell said.

Initial plans call for a twice-yearly audit. Technicians will visit participating mills and select samples of yarn and stock in process, according to procedures which will not only satisfy laboratory requirements but will also take into account the processing organizations and equipment of each mill.

Samples will then be labeled and brought by truck to State College to be coded, conditioned, and tested at the CYSA laboratory. Reports of results will remain coded and confidential to the individual mill.

The interval between audits was planned to give time for the mill to make adjustments in production. Any progress or deficiencies will be revealed in the next audit.

The project will be a joint operation of the School's Textile Research Center, directed by William A. Newell, and the Department of Fiber and Yarn Technology, headed by Prof. Elliot B. Grover. Prof. D. S. Hamby will direct the program, and it will be supervised by Assistant Prof. William G. Stuckey.

Systematic analysis on this scale is brand new, according to Professor Hamby, although pilot studies have shown substantial improvement in quality and uniformity. Professor Hamby cites the case of a mill which achieved a 40 per cent reduction in variation of yarn number and a 30 per cent increase in yarn strength as the result of applying a quality audit made at the School of Textiles.

Next month...

ANNUAL PURCHASING FEATURE

For the fifth consecutive year the February issue of TI will contain a special feature planned to be of help to mill men who have responsibility for buying equipment and materials.

Members of the Carders' Guild of the National Association of Woolen and Worsted Overseers hear a paper on supervisory responsibilities at the Association's 76th annual convention in Boston recently. At the rostrum is John L. Hutcheson III, vice-president of Peerless Woolen Mills, author of the paper. DAVIS & FURBER MACHINE CO.

Modern wool mills need modern supervisors

Peerless Woolen Mills official told members of National Association of Woolen and Worsted Overseers

Staff report

PRODUCTION supervisors and plant superintendents of the woolen and worsted industry gathered at Boston's Hotel Madison on November 13-14th for the NAWWO's 76th annual convention. The Carders' and Worsted Spinners' Guilds invited representatives from the industry to present papers of technical interest, while the Woolen Spinners' and the Dressers' and Weavers' Guilds held individual meetings for the exchange of knowledge on plant problems.

A highlight of the program was a paper presented before the Carders' Guild by John L. Hutcheson III, vice-president, Peerless Woolen Mills, on the subject, "Responsibilities of Supervision in the Modern Woolen Mill." Mr. Hutcheson traced the changing role of supervision over the last twenty years and described the organizational set-up of a modern woolen mill, which eases the supervisor's load by providing him with vital information on the various departmental functions of technical and nontechnical nature.

While the responsibilities of a supervisor have not basically changed over the years, today's supervisor is better able to discharge his responsibilities which include (1) instructing employees in their duties, and (2) maintaining and operating machinery efficiently for quality production.

The supervisor of twenty years ago, in what might be considered an outdated plant, was usually an employee who had worked at every department job before his promotion. After being promoted, he suddenly found himself responsible for the operations of his department—with no background, however, in costing, production planning, personnel management, and other aspects of management. What's more, Mr. Hutcheson pointed out, management did little or nothing to further his training in these fields.

Because such a man lacked training, management seldom kept him informed of long-range plans, of conditions facing the company, or of other subjects which would have been of benefit in operating his department. In addition, management supplied him with little information concerning his daily operations regarding such things as cost, efficiency of machinery, and control of waste and quality. Facts and figures were generally prepared only quarterly or annually rather than on a daily or weekly basis.

With only the information which he was able to acquire by daily observations it was inevitable that the supervisor had trouble functioning as a true manager. He was actually almost a middleman—neither management nor employee—trying to represent the best interests of each to the other without the proper tools to do the job well. It is little wonder that such a man found it difficult to operate his department with maximum efficiency.

Today's new supervisor, on the other hand, has had courses in modern management, covering such important subjects as personnel management, quality control, cost control, safety, production planning, industrial engineering, and the like. He is also trained to utilize services of the staff group which has been added to modern mill management, and to interpret the facts and figures that the staff's specialists prepare for more efficient and profitable operation of his department. At the time a new supervisor assumes responsibilities, he already has a thorough knowledge of the functions of management, and there are advanced courses available to him to keep him posted on the latest developments in the field.

In the modern woolen mill organization, the staff group which

provides the supervisor with daily and weekly reports and advises him in the solution of difficult problems, is comprised of specialists in the following functions:

Engineering. This group aids the supervisor in machinery evaluation and layout, in preventive maintenance, and on problems relating to plant buildings. The group provides an inspection service, informing the supervisor of the conditions of his machinery and buildings and possible fire hazards.

Purchasing. This group channels information to the supervisor concerning new developments in the machinery field, keeps him informed on latest prices of supplies he uses, orders supplies that he requires, and helps him set up and maintain adequate inventory controls.

Production Planning. This group plans the production of the plant, helping the supervisor coordinate his planning with the preceding and succeeding areas, and makes available to him a continuous flow of raw materials for his machinery.

Quality Control. This group continually checks the quality of the products made in the supervisor's area, using the latest quality control methods available, and quickly reports any deficiencies.

Waste Control. This group helps the supervisor by accounting for the waste made in his operation, informing him when it is excessive, and advising him of possible methods to correct this condition.

Industrial Relations and Personnel. This group screens potential employees for the supervisor's area, supplying him only with those qualified for the openings. He is helped with his indoctrination and training programs. The group also aids him in the development of programs for transmitting information to his employees — informing them concerning conditions relating to their welfare.

Chemical Laboratory. This group evaluates the chemicals presently being used by the supervisor; keeps him informed of new chemical developments which will aid him, and advises him on any problems of a chemical nature.

The Industrial Engineering Department. This group helps the supervisor in determining the standards for cost by which he should judge his operation, and informs him daily if he is maintaining these standards. They help him set up incentive payment programs in such a manner that each employee is paid for the effort he puts forth. They administer these programs for the supervisor and help him determine which of his employees are either over or under assigned in the amount of work they can capably do in an efficient operation. In addition, the industrial engineering department keeps up with the most modern systems for handling materials, and informs the supervisor of those which he can utilize to advantage in his area. This department is able to provide the supervisor with daily reports, showing him which machines did not meet the expected efficiencies the preceding day, thus pointing out quickly the deficiencies in his area.

In concluding this portion of his talk, Mr. Hutcheson presented the premise that *any* woolen plant can be a competitive modern mill, provided that top management is willing to furnish the supervision with proper information, controls, training and staff functions; and that supervision is willing to accept these new ideas and utilize them for more efficient operation.

Are European Mills Competitive With Ours? As an interesting sidelight to his paper on a supervisor's responsibilities, Mr. Hutcheson spoke briefly about a recent tour he had made of European woolen plants, confining his comments to the carding operation.

There was a noticeable contrast, Mr. Hutcheson stated, between the carding operations of plants in England and those on the Continent. Plants in England were equivalent in all respects to those he had seen in this country. The cards were usually Platt's and Tatum's, and they were operating at excellent speeds and efficiencies.

A 78" Platt "Josephy" card which he had seen, was producing 200 lb/hr of a yarn containing 1000 yd/lb. However, on the conventional single doffer card, production was generally about 160 lb/hr.

Mr. Hutcheson said that he was particularly impressed with the condition of the stock at the time it was supplied to the carding department. This open condition was accomplished through the utilization of the proper types of wool and a very thorough system of picking and blending. This stock, in combination with the excellent condition of the machinery and years of experience in the art of carding on the part of both supervision and employees, are responsible for the high level of quality one finds in English yarns.

The picture on the Continent is somewhat different from that in England, Mr. Hutcheson said, with cards operating at considerably lower speeds. He estimated that the cards he had seen in operation were producing at a rate of about 80 - 100 lb/hr, as opposed to 160 lb/hr in English plants.

The majority of the spinners were using nonautomatic cards in order to maintain evenness of roving, as they felt the present hoppers and intermediate feeds could not supply a web of satisfactory quality to the condenser. Although such a set-up requires more labor, the wage scale is considerably lower than it is in this country, and manufacturers feel that the high level of quality obtained through an adequate work force is justified.

But throughout Europe there is evidence of a tendency toward modernization, Mr. Hutcheson concluded, and most carders feel that the new hoppers and intermediate feeds now available from European machinery manufacturers will produce roving of satisfactory evenness. Most units already have one or more automatic cards in operation.

(Report of Dressers' and Weavers' Guild technical discussion on next page.—The Editors)

Wool overseers convention (continued)

Henry C. Laponsee, retiring NAWWO president, addresses members of the Dressers' and Weavers' Guild. Seated from left to right are Alfred O. Preuss, retiring Guild secretary; Philip E. Roche, newly elected secretary; Prof. A. Woidzik, Lowell Technological Institute, who served as moderator; Francis Vayo, chairman; and Emil H. Tegtmeier. STAFF PHOTO

DRESSERS AND WEAVERS DISCUSS PROBLEMS

Francis Vayo, chairman of the Dressers' and Weavers' Guild, introduced Prof. A. Woidzik of Lowell Technological Institute's faculty, who served as moderator of the Guild's meeting devoted to problems in dressing and weaving. Prof. Woidzik provided a basis for the question and answer period by pointing out that although all weaving mills have basic goals to meet with respect to production and quality, the problems of individual mills are not common to all because of existing local conditions. The questions which were brought out from the floor served to confirm this observation.

Some of the questions asked of the members, and the answers which were offered, were as follows:

Q. Which stop motion has the greatest number of failures which affect production or quality?

A. On woolens, one weaver said, it was mostly the warp stop motion which failed and caused tangling of ends. To minimize this, one weaver suggested that drop wires be set closer to the harness for better separation; and that no supporting rods be run between drop wires and harnesses. It may help to have a separating rod between whip roll and drop wires.

Q. Was there trouble with shuttle points turning or loosening?

A. One weaver said that he had no problem in this respect in woolen and worsted weaving. A manufacturer of pickers of both types stated that the rawhide picker was apt to loosen shuttle points more readily than the plastic picker. On a dollar basis, he said, the plastic picker, which costs roughly twice as much as the rawhide picker, was selling equally.

Another weaver said that a rawhide picker was best for shuttle points, while another claimed that he had no problems with loosening or turning of points with either rawhide or plastic picker. In another plant, a weaver found best results by using plastic pickers on the magazine side of the loom and rawhide pickers on the box side. But another weaver said that he was using plastic pickers on both sides with good results.

Q. Were sharp tips preferred to blunt tips on plastic pickers?

A. One weaver found that a semi-blunt point was preferred to a sharp point, which he said reduced the life of the picker and did not cam out the shuttle on box changes as well as a semi-blunt picker.

Q. How can dressers help toward better weaving?

A. A suggestion was made by a weaver that a closer cooperation between dresser and weaver could solve many problems. One weaver said that many breaks and smashes could be eliminated if dressers would make a loose loop, in the shape of a letter "S."

Q. A problem concerning slack ends in a warp was much discussed by dressers and weavers alike. The weaver who was experiencing this problem said that the slackness occurred on 5 to 15 ends, located about 5-6 inches from the selvage. Usually, the slackness occurred in the first section, and it had been pin-pointed to one specific dressing machine. The problem was not critical because it had not as yet caused any defective cloth, but it required that adjustments be made on the loom.

The weaver stated further that the loom had been thoroughly checked, but the weaving operation was ruled out because the slackness occurred only on one side. The slackness was not consistent throughout the warp but would disappear after a while. The last cuts put on the beam, he said, sometimes gave the same trouble.

A. One weaver suggested that the compressor be removed. In his plant, he said, all compressors had been removed because they caused streaks which showed up in the finished piece. Without the compressor, this weaver said, beaming was more even. Although the warp was softer and less yarn was put on the beam, improved quality warranted beaming without compressors.

Another weaver was of a similar opinion. In fact, the discussion pointed to the compressor as the probable cause of the slackness.

In a general discussion on personnel requirements for the dressing department that followed, several dressers remarked that women often made excellent dressers, producing a consistently superior quality of work.

Q. What is the prime factor which limits maintaining weaving production at a constant level?

A. This question brought forth a lengthy discussion in which there was general agreement that the following factors were of greatest importance: (1) The loom, (2) Yarn, (3) Type of work, (4) Work loads, and (5) Personnel.

Weavers placed these factors in varying orders of importance. But one weaver stated that in his opinion efficiency was the most important, followed by yarn quality, and the need for keeping the operating parts of a loom in exact adjustment. He said that at speeds higher than those the loom

was designed for, mechanical adjustments required more rigid adherence to tolerance; that at lower speeds, on the other hand, the loom would operate more efficiently. However, speeds below those for which the loom was designed would cause problems. Increasing the speed, he said, was not always possible, too, because a particular yarn might not meet the more stringent requirements that this called for.

The design of a loom also came in for discussion. A loom manufacturer's representative stated that the loom manufactured by his firm was designed to operate under existing practical conditions, which took into consideration such factors as yarn quality, the type of personnel, and the less tangible factors of the human element. Any given loom, he said, can operate only as productively as the yarn will allow. As speed is increased beyond the loom's intended productivity, conditions are aggravated and the demands on quality of yarns are increased — and some yarns cannot stand higher loom speeds. Furthermore, under practical conditions looms can receive only minimum attention. To operate only a few looms at higher-than-average speeds may be possible, but when a larger number are placed into operation at the higher speed, problems multiply and productivity will decline.

There was agreement among the weavers that each of the factors mentioned above had a place of importance in production weaving, and that any one could affect productivity. The loom itself and the quality of the yarn, together with the human element, were cited as the most important factors in maintaining productivity at a constant level.

Officers. At the business session, the following officers were elected: president, *Gregory L. Tite,* Charlton Woolen Co., Charlton, Mass.; first vice-president, *Arthur L. Mullen,* Albany Woolen Co., Albany, N. Y.; second vice-president, *Arnold H. Bates,* Wood Co., Hillsboro, N. H.; third vice-president, *Stephen Rittlinger,* Aldon Spinning Mills, Talcottville, Conn.

Officers re-elected were as follows: secretary, *James J. Burns,* Livingston Worsted Company, Holyoke, Mass.; asst. secretary, *Joseph Nash,* Warrenton Woolen Mills, Torrington, Conn.; treasurer, *Sullivan Gillette,* Roxbury Carpet Mills, Saxonville, Mass.; asst. treasurer, *Francis D. Herbert,* Aldon Spinning Mills.

Elected for a three-year term as trustee was *Alfred O. Pruess.*

Don't underestimate the growing influence of employee publications

■ "NO ONE is in a better place to influence the course of today's idealogical battle than the industrial editor. There is no way in which he can better serve his employer than by educating voters and union members about the facts of economic life."

This is the opinion of Les Avery, director of public information of the National Association of Manufacturers.

In a recent address before the Northern Ohio Industrial Editors Association, this experienced veteran of the news field, public and corporate, placed particular emphasis on the employee publication editor's responsibility for keeping readers informed on heretofore controversial matters including political affairs, union philosophy, and the comprehensive company story.

An extract of Mr. Avery's address which appeared in the October 16, 1959, issue of "NAM News" follows:

It is obvious that the company publication is a strategically placed weapon against political foolishness, if it is so employed.

The greatest support for the "spend ourselves rich," and "tax business poor," principles of government come from union political leaders. And it is probable that the new Labor-Management Reporting and Disclosure Act will give union members a voice in what positions their unions take—in many of these unions for the first time.

It is also evident that the company publication reaches union members, in addition to reaching other employees.

Now, the union is an institution that seems to be here to stay—and there is no point in attacking unions as such. Few businessmen today would do away with unions, even if it were completely within their power to do so.

Duty of Editors. The hope for the company publication is that it can help to win unionists away from dangerous political and economic policies.

It seems to me that the time and the circumstances are right for just such a move.

I am sure that you are aware that the new labor act wouldn't have had any chance of becoming law except that an aroused public wanted it. But there is more to this story. Opinion Research Corp. polled the general public and union members on what ought to be in a labor bill when a bill was before Congress.

Union members, the poll showed, wanted as strict a bill as the general public. Furthermore, the percentage of union members who wanted a strict labor bill exceeded the figures for the general public. Yes, and I mean on such questions as organizational picketing and secondary boycotts—more union members approved than opposed the protection of the public. . . .

Reaching Union Members. The industrial editor can make an ally of the rank-and-file in many cases. He can do this by telling the story of the relationship between government and business, and the relationship between business and the concerns of the employee.

The industrial editor can also stimulate the political participation of the employee.

Naturally, the employee publication is not free to favor one or another political party, or to campaign for or against candidates. It is free, however, to pursue the economic education of its readers, and to make it clear to employees what kind of men in politics will encourage the economy and what kind will damage it.

Freedom of Speech. The employee publication also is free to speak out on local and national issues which directly affect the business. I have recently read a publication of the Dow Chemical Co. down in Texas, which explains at length the relationship of growing tax burdens and employment costs to loss of competitive position and to loss of employment opportunities. This article was very specific, citing the figures as they related to the particular plant in which the employees worked.

In that Texas community, and the same is true of many small cities, the employees of a major plant make up a large part of the electorate. When you talk to employees you are talking to voters. . .

Mill reports on plated travelers

Alabama Textile Operating Executives gave their experiences with "special" spinning rings and plated travelers

Staff report

MUCH LONGER life is provided by plated travelers, according to spokesmen for two of the three Alabama mills which submitted answers to the following question asked at the recent carding-spinning forum*:

Give your experience in using new or modified rings and travelers such as antiwedge rings and plated travelers. Please give the following information:

(a) Grade and staple of cotton, carded or combed.

(b) Flange type and number, yarn size, yarn twist, traveler type, ring size, package size, traveler speed, humidity, frame make and type, drafting system and draft.

(c) Effect on ends down, traveler life, traveler speed, yarn quality, length of break-in period, change in traveler size or type, ring wear, and any other advantages or disadvantages.

Mill A uses rings with special finishes, combs SM 1⅛" cotton; spins 30s and 40s warp and filling (1⅞" rings); uses twist multiples ranging from 3.95 to 4.08; spins on 9" bobbins; has traveler speed of 5695 fpm; has put new drafting systems on old frames of 2¾" and 3¼" gauges; uses split back No. 1 flange, ⅝ circle, square point plated travelers. There has been no change in ends down since the traveler has been adopted, but traveler speed has been increased; changing costs have dropped while traveler cost has remained the same. The firm breaks in rings by leaving travelers on for increasing lengths of time until full running time is reached. Draft is 30; and there is no visible ring wear after one year.

Mill B reports plated travelers decreased ends down by five per thousand spindle hour. Traveler

*Sandpaper carding was a highlight of the carding discussion, report of which appeared in TI for Dec., 1959, pp. 83-87. —The Editors.

life doubled from six running days to 12 running days while the speed remained the same. Yarn quality has remained the same and rings show no wear after five months. Travelers are of No. 2 flange; cotton is SLM 1″ carded; yarn is 20s with 4.66 TM; 2¼″ rings; 9″ traverse; traveler speed is 5424 fpm; humidity 40 per cent relative; traveler is No. 4, 1½ circle; draft is 18.

Plated travelers at *Mill I* have brought no noticeable ends down improvement but have a life of 528 hours compared to 168 hours of those formerly used. There has been no change made in traveler speed, size, or type, and no change has occurred in yarn quality. It is noted that the plated travelers fly off a bit more frequently than "old" ones and that they appear to groove about as much as did regular travelers. However, in grooving, they do not show burn.

A bright grade of SLM 1 3/32″ cotton is combed; travelers have a No. 1 flange, No. 1 circle; 34.5s warp and filling are produced on ring sizes from 1½″ to 2″; twist multiples are 4.35 for warp and 3.60 for filling; bobbin sizes are 9½″ and 10″ on warp yarns and 8¾″ for filling; traveler speeds on warp yarns run from 5230 to 5750 and are 3700 on filling; humidity is 50 per cent relative; and drafting systems are modern, long-draft types.

W. A. (Bill) Edwards, superintendent of Avondale Mills' Bevelle Plant in Alexander City, led the discussion of spinning problems.

After-waxing recommended for Dacron-cotton yarns

■ IF YARNS spun from blends of Dacron and cotton are after-waxed at the slasher, they split easier at the main split rod and have less tendency to shed in slashing and weaving, the Du Pont Co. reports.

In a bulletin* which contains two formulas for sizing these yarns, the company says it has been found that the same wax as used in the size formula should be melted and applied to the yarn between the last can and the main split rod. As a guide to the amount of wax that should be applied, it is recommended that the surface of the applicator roll should move one inch for each yard of warp that passes over it.

Rubber quetsch rolls have been found to be satisfactory for this sizing operation. It is suggested that pressure on the No. 1 roll be 800 to 1000 pounds; on No. 2 roll, 1000 to 1200 pounds.

A speed of 40 ypm is recommended with stretch ranging from 0.0 to 1.0 per cent. Size pan temperature should be 202 to 205 F.

On nine-can slashers the following temperatures of the drying cans have been found satisfactory: 220 F; 220 F; 220 F; 190 F; 190 F; 190 F; 180 F; 180 F; cold.

The mixing kettles, size pan, and lines should be thoroughly cleaned with hot water, or a solution of water and soda ash, before changing to a different size, according to the report. This procedure will prevent any contamination and insure a better bond between size and yarn, it is pointed out.

Excessive tensions or tension variations should be avoided wherever possible, as streaky fabric and poor weaving performance often stem from such occurrences.

The most common causes of tension difficulties are said to be (1) uneven tensions in winding; (2) uneven tensions in warping; (3) yarn sticking to cylinders of slasher; (4) slasher stretch greater than 1 per cent; (5) slasher stops.

A coating of Teflon on the first four cans will normally prevent any yarn sticking to their surfaces. A "wet lease" between the quetsch roll and the first drying can is desirable from the standpoint of obtaining a better separation of the sized ends. To prevent size build-up on the "wet lease" rods, they should be rotated slowly in the same direction as the warp, the bulletin indicates.

*Bulletin D-110 (Nov. 1959) "Slasher Sizes for Blends of Dacron and Cotton" published by Textile Fibers Department, E. I. du Pont de Nemours & Co., Inc.

Ask for TI's 1959 Index

THE SUBJECT INDEX of articles which appeared in "Textile Industries" in 1959 (Vol. 123) will not be included in a regular issue of the magazine. Instead, the annual index will be produced as a separate publication and furnished free to those who ask for it.

Either write to The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga., or use the handy postage-free card on page 151 to request a copy.

The index will be most helpful to readers who preserve their copies of "Textile Industries" as they are received, either in files or bound volumes, as it will enable them to quickly locate articles in which they are interested.

For those who do not save their copies of the magazine, the index will still be useful, since files of "Textile Industries" are available in the majority of public libraries in the textile manufacturing areas.

Textile research

by J. B. Goldberg
Consultant to the Textile and Allied Industries

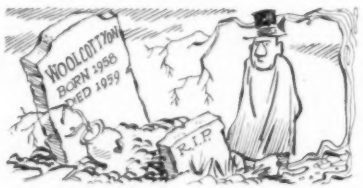
Exclusive

Part 1

AS IN THE PAST, the list of accomplishments which may be attributed in large part to research and development during 1959 is most impressive. In the day-to-day activities of those engaged in production and sales, there is a tendency to assume that all of the success in creating new markets is due to ingenious styling or super-salesmanship, with little credit given to the scientific contributions which provide the tools for fashioning profitable products or lowering costs. The following review may serve as a reminder of many of these contributions.

FIBERS AND YARNS

Natural Fibers. What might be regarded by man-made fiber producers as a conspiracy to unite and fight is the report that Russian scientists had created a "wool-like" fiber from cotton. This new fiber posed a threat to some of the synthetics with such characteristics as resistance to soil burial deterioration and high temperatures. The frequent reference to the resistance of fibers to soil burial effects may lead the layman to suspect that the research scientist is determined to bury most textile fibers before they have had a chance to enjoy life.



A study of the effects of high energy radiation on cotton disclosed only increased mildew resistance as a possible advantage, likely to be outweighed by the disadvantages of lowered tensile strength and altered dye affinity. A new happy union of the natural and synthetic fibers was noted in a rope company's discovery that the addition of flax to nylon resulted in overcoming certain deficiencies in the all-nylon rope. One improvement was the contribution of cooler running properties by retaining a certain amount of moisture.

Also from the U.S.S.R. came word of the development of a new variety of cotton plant which immodestly sheds its leaves on ripening, the defoliation taking place without any chemical treatment. Improvement of a 20-year-old process for the spinning of kapok fibers was credited to a Belgian concern, the naturally water-resistant fiber taking on strength after being spun and woven.

The upgrading of cotton by yielding yarns with better strength and abrasion resistance in knitted fabrics was the result of a new method for applying colloidal silica to short cotton fibers at the time of mechanical picking. New processing cost studies of the continuous carbamoylethylation and aminization of cotton to yield improved physical and chemical properties for specific end-uses indicated that these treatments were still too expensive for large-scale commercial success. The mercerization of cotton fabrics before partial acetylation was found to be effective in providing improved flex abrasion endurance and tearing strength, according to an investigation conducted at the Southern Regional Research Laboratory.

Developed by the Deering Milliken Research Corp. and the Institute of Textile Technology, a simple process to increase cotton's resistance to decay and heat by padding with small amounts of sodium hydroxide and acrylonitrile, neutralizing, and washing after a few hours of reaction in a closed container, was announced in November. This cyanoethylation technique promises to be economical enough to make it attractive to finishing plants. Vying for the popularity attained by many of the synthetics in contributing to the crease-retention properties of fabrics, a chemical process for producing durable creases in cotton fabrics was described in a recent issue of the *American Dyestuff Reporter.*

The animal kingdom was not without its share of research achievements during the past year. An unusual approach to wool mothproofing was taken by a California entymologist who discovered that a class of compounds

achievements in 1959

called "anti-metabolites" could be applied to textile materials and acted to discourage attack by insects by upsetting their digestive system and starving them to death. A United Kingdom research establishment evolved a process utilizing Cobalt 60 to sterilize imported animal fibers, and the Tin Institute of England reported promising results in the mothproofing of wool with organic compounds of tin.

A new wool stabilizing process involving the use of potassium bromide and said to retain the fiber's elasticity and improve its wear resistance was reported by the Israel Institute of Fiber and Forest Products Research. Another step towards the commercial development of low-cost processing to make woolen fabrics for "drip-dry" apparel and blankets was taken by the Australian Commonwealth Scientific and Industrial Research Organization with the demonstration of a combined chlorination and flat-setting treatment to eliminate felting shrinkage.

Research investigations to produce truly washable "minimum care" wool cloths continued in this country and abroad. Scorning the more technical approach of the scientists, a South African couple patented a simple device which allows wool clothing to preserve its shape in laundering by use of a drying frame said to resemble a

barbecue grill. Supplementing the known technique of obtaining two-tone dyeing effects on wool by blending chlorinated with regular wool, was one claiming similar dyeing contrasts by pretreatment with ultra-violet rays. Although a nationally advertised tooth-paste claims credit for making the consumer wonder where the yellow went, prevention is better than cure and it took government scientists to achieve success in the case of wool. Last June a patent assigned to the U. S. Dept. of Agriculture covered a method for preventing the yellowing of wool with an acidified aqueous solution of a benzophenone compound.

Man-Made Fibers. Despite public proclamations of the sheer folly of introducing more man-made fibers in the United States, a belief supported by private prayers of mill men, dyers, and converters, the flowing tide of new fibers and yarns showed no signs of ebbing in 1959.

Type 82 dyeable Orlon filament yarn emerged from the sampling stage with the distinctive name of "Cantrece," by coincidence rhyming with "caprice." In limited production, this yarn was confined to use in textured form for knit goods, duplicating the hand of costly high-fashion silk imports. More recent additions to the family of Orlon acrylic fibers were a premium-priced 3- and 6-denier Type 21 staple possessing a reversible crimp which uncurls in the presence of water but returns on drying, and a Type 37 carpet staple. The former featured elasticity and shape-holding properties superior to regular fiber in such applications as waistbands and cuffs as well as the bodies of knitted outerwear.

B. F. Goodrich Chemical Co. introduced a modified Type X-7 Darvan dinitrile fiber with improved dyeing properties; and disclosures during the Federal Trade Commission's hearings on the new Textile Fiber Products Identification Act indicated that Union Carbide was considering production of a new fiber containing 65-75% acrylonitrile.

In the realm of cellulosic fibers, a most unusual and unprecedented event was last February's joint announcement by the American Viscose Corp., American Enka Corp., and Courtaulds (Ala.), Inc., of a new class of high-modulus cellulosic fibers, identified as "Fiber 40," "Fiber 500," and "SM-27," respectively. Data presented at a meeting of the American Association for Textile Technology indicated that fabrics woven of yarns spun from these fibers possessed excellent stability in repeated washing tests without relying on the use of chemical finishes. It was also established that improved crease-recovery and

Further information on any of the research achievements described by Mr. Goldberg in this article can be obtained by writing The Editors, Textile Industries, 806 *Peachtree St., N.E., Atlanta 8, Georgia.*

wash-wear characteristics were obtained when similar fabrics were resin-treated. The writer expressed the opinion that the development of these fibers represented a major break-through for the cellulosics, likely to lead to greatly expanded markets and to offer serious competition for cotton in many end-use products.

From France a few weeks later came an announcement of a similar class of cellulosics, described as "polynosics," originally developed as the Belgian "Z-54" by Fabelta in cooperation with French and Swiss rayon producers and the Tachikawa laboratories. These high-modulus fibers were said to be related to the Torammonen rayon staple originally produced in Japan. Last summer the Hartford Fibres Co. disclosed plans to produce "Zantrel" high-modulus polynosic fiber under a licensing agreement with the above-mentioned European companies. Tentative published prices were 47¢ to 50¢ per pound, about 20% higher than the earlier established price of the American Viscose Corp. product.

Two new types of filament rayon yarns also announced at the beginning of the year were flat, straw-like monofilament yarns, Industrial Rayon Corporation's "Strawn" and Du Pont's "Civona." These were especially well-suited for upholstery and drapery fabrics, as well as for millinery. Super Cordura Type 272-F was offered by the Du Pont Co. as a new adhesive-finished high tenacity rayon yarn, with advantages of adhesion without fabric dipping, affording reduced processing costs when used for reinforcing mechanical rubber goods.

The French "Crin Vecta" monofilament yarn for selected uses, such as in tailors' hair cloths or brush bristles, was said to be manufactured from cellulose and synthetic resins; and a Swedish concern offered "Elaston," described as a novelty cellulose with a unique molecular structure combining properties of a high degree of elasticity, resilience, and water-repellency. One suggested use was a filler for quilts, although it could also be spun into yarns.

The Japanese Toho Rayon Co. unveiled "Alon," a high-tenacity acetylated rayon staple with properties superior to either viscose or conventional acetate. (Further details are to be presented by the writer at the February meeting of the American Association for Textile Technology in New York.) Cellulose acetate fiber and yarn innovations included Eastman's No. 75 lofted filament yarn, of particular interest in textured carpeting; and pilot plant quantities of Arnel 60, high-tenacity triacetate staple.

Continued progress was made by the producers of the true synthetic fibers. Among the polyamides, the General Aniline & Film Corp. disclosed work on a nylon 4, based on pyrrolidone. This fiber was said to have greater moisture absorbency than currently produced nylon 66 and 6, affording ready dyeability and greater comfort in apparel fabrics worn next to the skin. Although he did not disclose how many bottles were drained to provide the inspiration

as well as the raw material, a Parisian professor claimed that he had developed an amide fiber from phenolic acid extracted from cork.

Among the new nylon yarns introduced during the year were Du Pont's Type 280 semi-dull, suggested for use in upholstery fabrics; and American Enka's 40/8 and 50/13 semi-dull, low shrinkage yarns for welts in seamless hosiery, and 70/32 and 100/32 yarns for texturizing. Chemstrand offered two sizes of heavy denier textured filament nylon yarns under the name of "Cumuloft." This yarn was made with a modified cross-section and built-in crimp to impart a high degree of bulk in carpets. It was reported Allied Chemical Corp. was also experimenting with a similar textured filament nylon yarn for this market.

To reflect the twinkle in the eyes of men attracted by female limbs, Du Pont's "sparkle" nylon hosiery yarn was said to derive its metallic luster from "Y" cross-section filaments. Another non-round cross-section nylon, said to provide a distinctive dry hand, improved cover and unusual surface appearance was introduced by Du Pont early last month. This Type 560 yarn was produced in 30, 40, 70, and 200 denier sizes at a premium of from 5¢ to 10¢ per pound. An addition to the list of producers of nylon 6 was the Firestone Tire & Rubber Co. with plans to erect a tire cord plant within the year, while Beaunit revealed intentions to expand presently limited capacity for similar yarns.

Improved polyvinyl alcohol fiber and yarns, originally identified as "vinylon" but now classed as "vinal" according to F. T. C. ruling, were described by Air Reduction Chemical Co. representatives at the September AATT meeting in New York. The "FO" high-tenacity multifilament yarn was said to show promise for use in tire cord and industrial fabrics and in Japan it was claimed that production cost of a new vinylon fiber was lower than that of the acrylics. Another Japanese synthetic, "Urylon" polyurea filament yarn, with basic raw materials reported to be derived from rice, whale blubber, and paper pulp waste liquor, was also under evaluation by one or more American firms. Perlon, a nylon 6, is now being produced abroad in over 30 spun-dyed colors.

A few new names were adopted for several yarns, Du Pont changing "Ondulé," to "Ondelette" for their slub rayon yarn while the U. S. Rubber Co. announced a change from "Vyrene" to "Lastex S" for its elastomer yarn. Dow Chemical Company's "Q-957" vinylidene chloride copolymer ribbon filament yarn became available commercially as "Rovana" in three sizes and 10 colors, and "Vycron" was registered as Beaunit's name for polyester fiber and yarn.

Du Pont's elastomeric fiber, offered experimentally last year under the name of "Fiber K," was officially launched in October as "Lycra." Principal attributes were low density with two-three times the restraining power of conven-

tional elastic thread, durability, and resistance to cosmetic oils and lotions as well as perspiration, and ready dyeability. What appeared to be a competitive product was a polyurethane elastomer thread announced by the Globe Mfg. Co. of Fall River, Mass., with the admitted disadvantage of a tendency to discolor on exposure to light.

Interest in polypropylene as a textile fiber-forming material grew rapidly during the past year and Reeves Brothers, one of the first extruders of monofilament yarns, announced commercial output of low-denier polypropylene fiber in multifilament yarns and staple in September. Two months later the Industrial Rayon Corp. entered into limited commercial production of a range of continuous filament yarns, tow, and staple to be marketed as "Prolene," while AviSun, owned jointly by the Sun Oil Co. and the American Viscose Corp., adopted the name of "Olane" for its polypropylene fibers.

A number of U. S. patents issued during the past 12 months disclosed new techniques for producing voluminous, bulked, and crimped yarns. Assigned to the University of Minnesota was a method of imparting curl to nylon yarns by subjecting them to the desired new configuration, then exposing them to an atmosphere of anhydrous hydrogen chloride gas in a closed chamber. Two different inventors patented an original method for making aerated or puffed type polyamide fibers with voids produced by gas bubbles, but with no surface breaks. One was described for nylon fibers, whereas the other referred to a process for treating dry rayon or acetate fibers to generate gas bubbles internally, then precipitating barium sulfate within the fibers.

Novelty rayon yarn composed of crinkled, continuous filaments concentrated in heavy denier portions of "thick-and-thin" yarns was patented by the Du Pont Co. while the American Viscose Corp. received a patent on a process for making a bulky, color-pigmented rayon yarn by supertwisting, setting the twist by formaldehyde impregnation, curing, and detwisting to yield a durable wool-like effect. This company also patented a crush-resistant textile material produced by incorporating a specified polyacrylamide in a regenerated cellulose before spinning. A unique method for dulling nylon and similar fibers by providing indentations on the surfaces through contact with an indenting material while the fiber is passed between pressure rolls was the subject of a patent issued to a Pennsylvania yarn throwster.

Courtaulds Ltd. developed a process for improving the properties of regenerated cellulose fibers by impregnation with heat-hardenable resins, while the American Viscose Corp. was the recipient of several patents designed to produce dull-skin rayon. Apparently interest in luring a greater catch by reducing the amount of reflected light from a nylon fishing line, an Iowa inventor discovered that the surface could be etched with strong formic acid, at the same time increasing the line's flexibility with no loss in strength.

A new dry, gas-plating process developed by an Ohio company made possible the application of a nickel coating to glass fiber at a cost of only 99¢ for 45,000 miles of fiber. The thermal modification of acrylonitrile yarns, resulting in a new filamentary material which contains at least 60% of a thermostable, non-ignitible material was the subject of a patent assigned to Johns-Manville Corp. in November.

Among the foreign patents issued last year were one to Courtaulds Ltd. disclosing means for making a bouclé rayon yarn by extruding viscose from two jets, stretching and twisting them together as they pass to a spinning box; and another to a German company covering the modification of polyester fibers by a treatment to roughen the surface, improving the absorption of sizing. Also to modify textile filament surfaces, but for other purposes, was a method involving the application of an irregular, bubble-like coating with a plastic such as polyvinyl chloride or polystyrene containing an azoic "blowing agent" which decomposes when heated. It was suggested that the scaly surface thus obtained might be used to give better binding of rubber to rayon tire cord or impart a warmer handle and similar properties normally associated with scaled fibers such as wool.

A British inventor described a product of highly plasticized synthetic polymers said to have advantages over natural rubber materials; and Imperial Chemical Industries, Ltd., patented means for brightening polyester fibers by adding a fluorescent compound during the manufacturing operation.

(The second installment, which includes 1959 research results in manufacturing methods and equipment, will appear in the February issue. For more information on any development mentioned, write to The Editors, TEXTILE INDUSTRIES, *806 Peachtree St., N.E., Atlanta 8, Ga.—The Editors)*

Recent developments

(from page 63)

makes of such equipment.

FABRICS AND FINISHES

New Proofed Fabric. An English firm is applying a waterproof finish to one side of a 1.9 oz high-tenacity rayon fabric for use in hospital sheets, pillow cases, and ward curtains. It is claimed that the fabric is not impervious to air, permitting "breathing" and eliminating condensation that takes place with rubber or plastic sheeting. The coated fabric may be washed, boiled, and pressed without loss of its special properties.

Soft Floor Covering Developments. La France Carpets, Inc., is offering a rayon or nylon-acetate blended yarn carpeting backed with sponge rubber which serves as an underlay and also permits cutting and laying without wrinkled seams. Another company has developed a patterned cotton fabric with a foam rubber backing, suggesting initial use as a floor covering and later as a luxurious padding under conventional carpeting. The world's first carpet of 100% solution-dyed virgin carpet nylon has been introduced to sell for about $7.50 per square yard.

Try these remedies for size

Georgia slashing forum also included discussion of optimum stretch, rusty selvage prevention, centrifugal pumps, squeeze roll buffing, and size cooking

Staff report

ALMOST without exception, those mills which run slashers at high speeds have some trouble with the size slinging from the rolls, analysis of replies given at the Textile Operating Executives of Georgia slashing-weaving discussion meeting* indicates.

In most instances some sort of guard is provided to keep the slinging confined to the size box (see photo at top of opposite page).

Mill Q bevels the squeeze rolls for approximately one-half inch back from the ends (see bottom photo on opposite page).

Mill K states: ". . . have both size roll and squeeze roll same length and keep properly aligned." The firm has used guards on their old type boxes to control slinging.

On the other hand, *Mill L* cuts the faces of its top rolls a quarter-inch shorter than the bottom roll faces. When centered, the top roll ends then are one-eighth inch inside the bottom roll ends. This arrangement cuts down on size slinging from the top roll. A guard controls bottom roll slinging.

By and large the plants maintain starting speeds throughout the set. But *Mill G*, slashing at speeds from 30 to 110 yards per minute (1150 to 1500 pounds per hour), reports a loss of from three to eight yards per minute just prior to doffing the loom beam.

What per cent stretch do you use on your slashers?

What do you consider optimum? Maximum?

Give yards per loom beam of a typical run.

Give yarn count, number of ends, and size of loom beams.

On dry work, *Mill A* operates with about 1.50 per cent stretch (over-all), reports an "average" set of 1520 ends, 16s yarn, and 24″ x 50″ loom beams. Such beams contain 360 pounds or 3000 yards. The over-all stretch on wet sets is about 4 per cent—end count on "average" is 5800, 14.5s yarn, 26″ x 66″ loom beams holding 1100 yards or 580 pounds. From 20 to 21 section beams comprise the slasher creels on such sets.

At *Mill B* the average stretch is 1.75 per cent with the range extending from 1.50 to 2.00. There are 1600 yards of 31s warp (3146 ends) put on 44″ beams with 20″ heads.

Mill C maintains slasher stretch at 1.50 to 2.00 per cent and states that the optimum is 1.50, the maximum 2.00. Loom beams are 34″ wide, have 24″ heads, hold 3600 yards of warp made up of 846 ends of 15s yarn.

Mill E maintains 1.50 to 2.00 per cent slasher stretch, believes the optimum should be 1.50 or less, puts 1500 yards of 12s yarn (1080 ends) onto 22″ beams (head diameter).

At *Mill F* the stretch is kept between 1.50 and 2.00 per cent, and 2000 yards of 30s yarn (4032 ends) are put on 26″ beams.

Mill G tries to maintain stretch between 1.50 to 2.00 per cent. The "safe" range is considered to lie between three-fourths of one per cent and three and one-half per cent. Beams have 26″ heads and carry 1375 yards of 12s yarn (2786 ends).

Mill H averages 2.00 per cent, puts 873 yards of 9s yarn (2008 ends) on 39¾″ loom beams fitted with 22″ heads.

Mill I considers 2.00 per cent to be the maximum stretch and 1.50 to be the practical minimum. The firm puts 2000 yards (3160 ends) of 31s yarn onto 45″ beams with 22″ heads.

The sheetings made at *Mill K* receive 1.00 to 1.75 per cent stretch; cotton twills and sateens receive 2.00 per cent to 2.75 per cent; rayons get 5.00 to 6.00 per cent. Those figures are considered optimum and maximum. Two thousand yards of 21s yarn (4110 ends) are put onto 60″ beams with 26″ heads.

The stretch at *Mill L* varies from 1.20 per cent to 1.60 per cent, depending on the counts. There the stretch increases as the counts grow finer, but the firm believes the stretch should never exceed 1.75 per cent. A stretch of 1.40 per cent is given a set of 23s yarns consisting of 5832 ends. Beam

Jesse Bradshaw of Fulton Cotton Mills led the slashing discussion.

*How to "fur" shuttles with nylon and experience with plastic shuttles were weaving forum topics of special interest. See report in TI for Dec., 1959, pp. 88-89. —The Editors.

slinging

heads are of 18″ diameter and hold 1100 yards of the above.

Mill M considers 2.25 per cent stretch the optimum, 2.75 per cent the maximum. Controlling beam density by pneumatic presser rolls rather than by tension, the firm puts 1390 yards of 24s carded yarn (5560 ends) onto 50″ beams with 26″ heads.

Mill N imparts 1.50 per cent stretch, puts 1050 yards of 17s yarn (4740 ends) onto its 54″ X-2 beams.

An effort is made at *Mill O* to keep stretch to 1.50 per cent, as the firm considers 1.00 to be the minimum and 2.00 to be the maximum stretch. Loom beams are 45″ long, have 26″ heads, and hold 1027 yards of 8.80s yarn (2562 ends).

Poplins and Bedford cords at *Mill Q* get 1.50 per cent stretch.

How do you overcome stained or rusty warp selvages resulting from metal dust produced by presser roll action against the insides of beam heads?

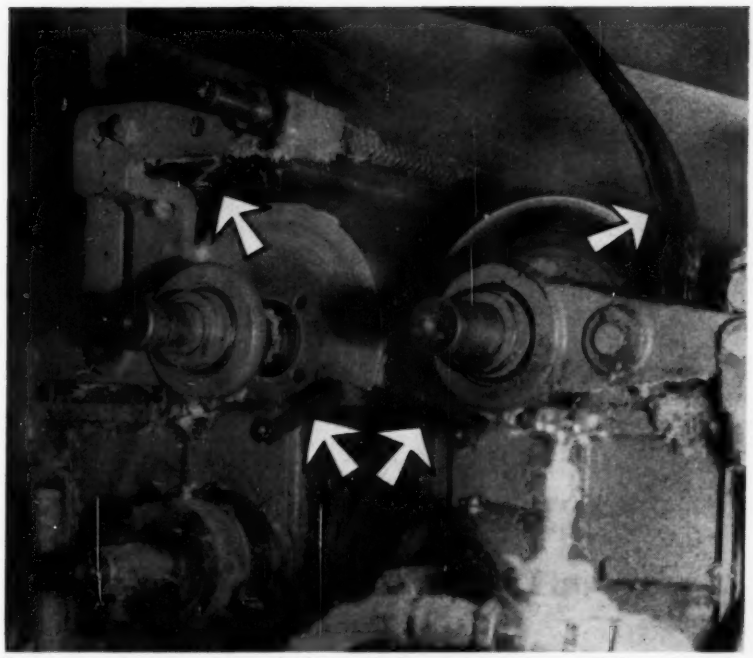
While some plants report that this is not a problem, most of them have taken a common step to correct for such staining. Paint is applied to the insides of the beam heads (*Mill A* applies a mixture of clear shellac and powdered white lead) to inhibit rust there and to give a surface easy to clean. *Mill B* goes a step further and applies paraffin wax to painted heads: *Mill I* does not mention paint but wipes heads clean and applies wax. Fiber end plugs for presser rolls reduce the amount of powdered metal from that source.

What effect does the use of a centrifugal pump have on size during transfer between size storage kettles and size boxes?

What would you recommend?

No changes have been noticed at *Mill E;* likewise for *Mill H* where size is lifted from basement level to first floor with centrifugal pumps. This system allows the size to by-pass the size boxes and return to the storage kettles when the size boxes are closed off, but even this constant flow has failed to change size pick-up.

Mill O made elaborate checks and ended up correcting size viscosity to offset a measure of thinning taking place inside the system. Four stainless-steel size



Top arrows point to simple guards that catch the size being thrown off the ends of the rolls and confine it to size box. Bottom arrows indicate blades that prevent size accumulations around flanges.

Tapering the ends of the top squeeze rolls (or "dumping") is the method which Mill Q uses to prevent slinging. Note the slight taper which is visible in this close-up photo where the metal straight edge and end of roll meet.

lines charged by 42-hp centrifugal pumps move size from storage kettle to slasher and return. Stopwatch-and-cup readings taken on new size from the cooking kettles to the storage kettles showed a value of nine seconds; readings taken from near-empty storage kettles gave a 7½-second value.

The size was thinning during the circulation period between its cooking and its use, so it was thickened enough to allow it to stand the circulation for the necessary one hour and still be of the correct viscosity. Approximately 225 gallons are made at a time.

Discuss your method of determining when rubber covered squeeze rolls should be buffed on Griffin size applicator.

Mill C buffs when size pick-up variation is noted, when fine hairline cracks appear in the rolls, or when there is a noticeable change in roll density or crystallization. *Mill F* buffs rolls every six months. *Mill I* buffs when size pick-up becomes too high or when the rolls appear cracked, and observes that "buffing every three months will keep the rolls in good shape."

Mill K depends upon visual checks, durometer checks, and desize checks. *Mill M* keeps a careful, daily visual inspection of the rolls while they are in operation, checking:

(a) Symptoms of low and high spots or places—too much size is visible on low places, too little on high places;

(b) For low selvages that let the yarn run out from under the roll; and

(c) Wet and sticking places in the sized warp—a portable moisture tester, the firm states, "will show a low place in your roll that might not be visible to the operator."

Give your experience with the different methods of size cooking, including homogenizer, Jet Cooker, and Sizeometer. State whether enzyme is used and whether powdered or liquid size gives best results.

Mill A homogenizes its starch, has had no experience with Jet Cooker nor with Sizeometer.

Mill C declares the Jet Cooker to be the best cooking method within its experience. Size penetration is good and has brought about a reduction in the amount of size per batch. Sizing cost has dropped from $0.92 to $0.62 per pound. The firm uses liquid size but does not use an enzyme. *Mill E* uses pearl starch and passes it through a homogenizer.

Mill M reports "no experience" either with the Jet Cooker or with the Sizeometer. Using a thin pearl starch with a homogenizer (prefers thin starch to thick starch used with an enzyme), the company reports good results with liquid size, powdered size, and paste size and block wax.

At one time *Mill O* cooked its size with steam for 1½ hours, using a thin boiling starch. Test results on liquid size discouraged its use, so the firm now uses packaged powdered size. By using one package of size per mix, the size maker is relieved of having to weigh the mix. *Mill Q* homogenizes a modified pearl starch at 1500 psi and cooks it for one hour.

Save time piece-dyeing Orlon-rayon blends

■ A NEW method for piece-dyeing blends of Orlon Type 42 and Type 25 with rayon provides a considerable saving in time, a recent Du Pont bulletin* reports. Also, three-fiber combinations of Orlon and rayon with Dacron can be dyed in one bath instead of the two previously recommended.

This new method applies only to fabrics such as dress goods or slacks fabric where direct dyes give satisfactory fastness on the rayon, it was emphasized. In other words, this technology makes it possible for all Orlon and rayon goods that do not require vat dyes on the rayon to be dyed by a one-bath procedure.

For pastel shades, the well-known one-bath method of using disperse dyes on the Orlon and direct dyes on the rayon can be used. For all other shades, the following new procedures are applicable:

In one method the Orlon is dyed with cationic dyes at 205 to 212 F. When the dyebath is essentially exhausted and the shade matched on the Orlon, direct dyes are added without lowering the temperature. The direct dyes are allowed to level at 205 to 212 F and then are exhausted by slow cooling to 160 F with the addition of more salt if necessary.

In an alternate method, the direct dyes are added first at 120 F and largely exhausted at 180 F. Cationic dyes are then added and the Orlon dyed at 205 to 212 F. This boiling will of course strip some direct dye off the rayon. In this case the direct dye must be exhausted again by slow cooling to 160 F, using more salt for the deeper shades.

It is essential that dye becks be fully enclosed for dyeing the Orlon. An auxiliary steam line in the upper part of the beck is helpful in maintaining the 205 F minimum temperature required for efficient dyeing.

Tips on dye selection and detailed instructions for dyeing by these methods are contained in the bulletin.

*Bulletin X-113 entitled "Piece-Dyeing Blends of Orlon with Rayon."

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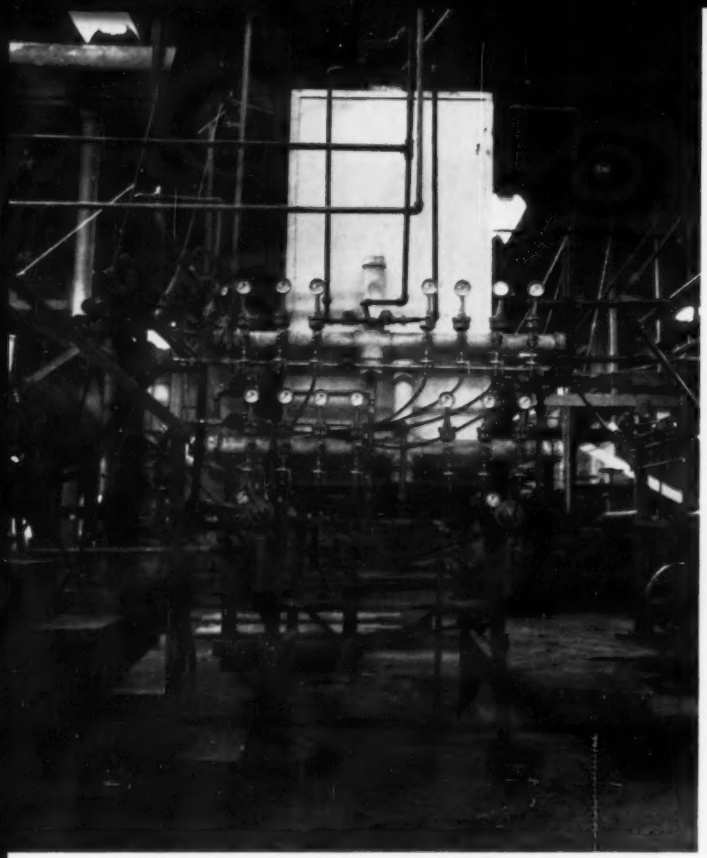


Mill-built unit at Crystal Springs Bleachery has seven spray nozzles on each side. It is used for applying thermoplastic and thermosetting resins to cotton goods (it was not in use when photo was made).

SPRAY instead of pad?

New process is simple, applies finishing compounds uniformly

Staff report*

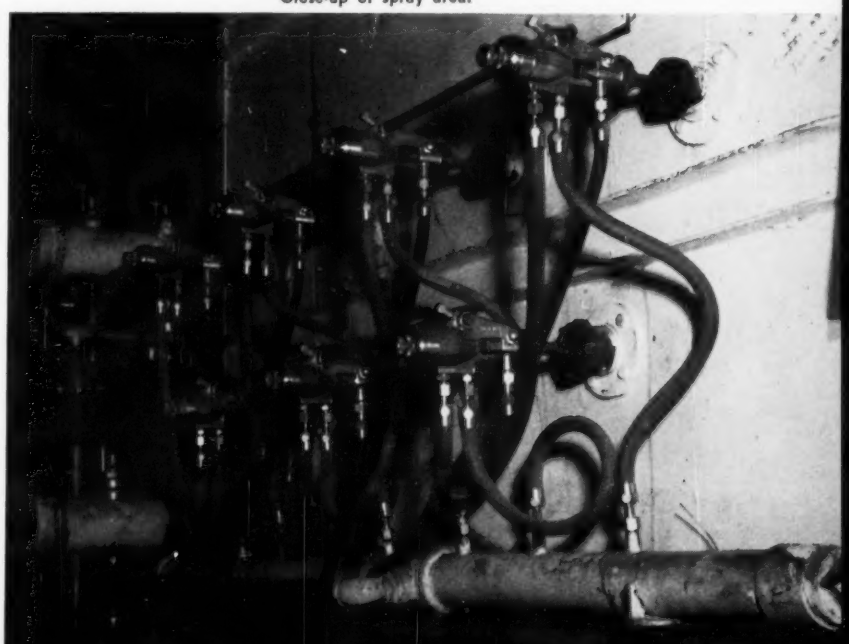
SPRAYING may replace padding in many cases for the application of various textile finishes, if a new processing technique developed by Crystal Springs Bleachery, Chickamauga, Ga., in cooperation with the Du Pont Co. and Binks Manufacturing Co., works out as well in other plants as it has in the plant where it originated.

The equipment required is simple: A series of spray nozzles (or "misters") arranged to apply the finish uniformly to the fabric; the necessary tanks, pumps, and piping; a compressed air or steam source; and a box-like enclosure for the sprays (Crystal Springs built its own) are the essentials. This accounts for one of the advantages of the process—low initial cost in comparison with a padder.

Operation is equally simple: The fabric is passed in front of the sprays, with fabric speed and spray volume coordinated to give the correct pickup of finishing compound. For application of finish to both sides, the fabric is passed between two banks of the

*Based on information supplied by officials of Crystal Springs Bleachery and the Du Pont Co.

Close-up of spray area.



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sprays.

There is nothing new in the application of liquids by spraying, of course. Paints, insecticides, acoustical insulation, and even cement have been applied by spray for years. And in the textile industry, spraying is successfully used in several processes: to apply fiber additives and fiber lubricants before spinning, in wetting fabrics before compressive shrinking, and in applying foam rubber to carpet backing, for example.

Application of textile finishes by spraying has also received a lot of attention; for instance, spray-application of resins was the subject of a paper presented at the recent Chemical Finishing Conference by a representative of the German Textile Research Institute (see TEXTILE INDUSTRIES for December, 1959, p. 115). However, the fly in the ointment has always been the problem of getting exactly the right amount of finish on the fabric, to close uniformity tolerances. This has been solved at Crystal Springs.

Advantages. Several advantages are claimed for the Unifog Process (as it is called by Du Pont, although finishes are sprayed rather than "fogged" onto the fabric), as compared with conventional means of finish application:

Low initial cost—This will depend on the elaborateness or simplicity of the installation; what equipment will be replaced; and whether or not any drying operations are eliminated, as they sometimes may be.

Low maintenance cost—Since no figures for a long period of operation are available, the comparison of maintenance costs between spraying and padding can only be estimated. Turning down of pad rolls is eliminated, of course. The sprays can be cleaned by operating them for a few minutes with water, but they still must receive an occasional thorough cleaning. Essentially, the "misters" may be said to be as self-cleaning as a paint spray. Occasional replacement of valves, diaphragms, gaskets, etc., is necessary, although use of stainless steel for some of the parts should increase wear life.

Reduced operating cost—As Du Pont puts it, "Reduced operational costs have already been evidenced by the elimination of both padding and drying steps during a finishing operation. For example, in the finishing of both lightweight and heavyweight cotton fabrics the padding and drying steps between the dye or bleach range and compressive shrinking machine have been eliminated, resulting in a saving."

Chemical cost reduction—Excess finishing compound is recovered, and there is very little wastage. And fabrics can be treated on one side only, where desired.

Increased production—Since wet pickup by spraying is only about one-third that of padding, drying speed can be at least doubled, and in some cases drying can possibly be eliminated.

New finishing effects—Production use at Crystal Springs has been limited to application of a polyvinyl - acetate - base finishing mix (applied as the fabric enters the compressive shrinking range) and the application of resins, both thermosetting and thermoplastic. However, there is no reason why any finishing compound which is not too viscous could not be applied. Some uses foreseen by Du Pont: applying a softening or smoothing agent to the face of a fabric and a firming agent to the back, application of a blooming agent to a sulfur black dyeing, top softening after resin finishing with the drying step eliminated, more economical use of solvent systems than is possible with the conventional dip and pad systems, application of materials incompatible in the same bath, warp sizing, and dyeing and finishing of nonwoven fabrics. Possible applications in dyeing may eventually be the most important uses of all.

In addition, goods may be sprayed dry, partially dry, or even wet, because the possibility of interchange with wet goods is eliminated. The use of radiant heat dryers becomes more attractive, since considerably less drying is involved than with padded goods.

Most experience to date has been with compressed air as the spraying medium; however, steam may be preferable in some cases, and this is the basis of a Du Pont patent. Obviously, steam would be precluded from some applications, for example where heat-sensitive vat dyes were involved.

Du Pont is offering the process to the industry without license or royalty, and will provide details to interested mills.

How to keep sound government and free enterprise—Mueller

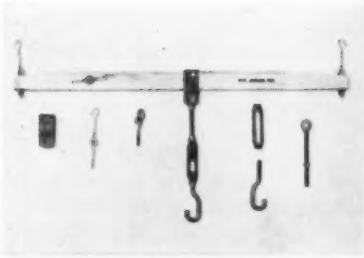
■ THIS IS the time for every businessman to engage in personal political action—all the way from Town Hall to Capitol Hill—if he wants to keep sound government and free enterprise from being ruined by adverse political action, according to Secretary of Commerce Frederick H. Mueller.

To advance sound government and strengthen free enterprise, he said, any businessman anywhere can do these three simple, practical things:

1. *Think much more deeply on public questions.* This means intensive study of all phases of our problems—foreign and domestic. By thinking about what is best for the entire country, your decisions are much more likely to be accepted by the public and your influence much more certain to be felt in the halls of government.

2. *Speak up much more frequently on vital issues.* Thus you give both the public and the politicians a better understanding of the needs of free enterprise and the roadblocks to greater business activity and increased employment. Try to be more pro- and less anti-something.

Hunt for ways to present your message—for example, write letters, circulate printed material, make speeches, give press interviews, face radio panels, use institutional advertising, testify at hearings, brief Congressmen, phone governors, buttonhole mayors, and speak out in town



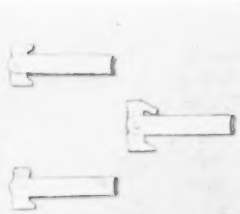
JACKSTICKS AND PARTS

SAVE

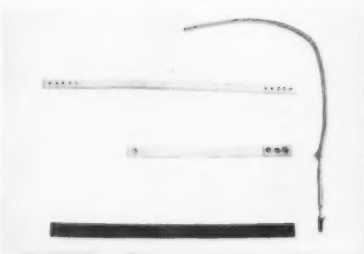
TIME AND MONEY

ON LOOM

CHANGE-OVER ITEMS



STIRRUPS, LOOPS, JACKEYES



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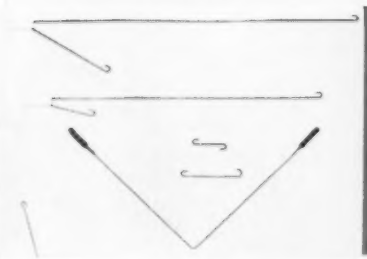
WIRES, HOOKS, STIRRUPS



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LOUIS P. BATSON *Company*

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meetings.

Private sales are made by convincing the customer of the desirability to him of the offered product. Why not use the same successful sales pitch in the market place of political ideas?

3. *Play a much more active role in public affairs.* Do so not simply under the exclusive label of businessmen, but as elbow-rubbing associates of public-spirited farmers, educators, scientists, architects, engineers, lawyers, workers, housewives, public officials, and all others seeking sound government, wise reform, and civic improvement.

Business insight and talent are urgently needed to help better the business climate of a community—to stimulate sound employment opportunities—to design wise local master plans to revitalize cities and improve suburbs—to enlarge educational opportunities—to reduce juvenile delinquency—to inject more private enterprise into government programs—to contribute ideas to meet the Soviet economic drive—to educate the public on the value of free enterprise. . . .

Back the cause of good government and those public officials and candidates who are fighting for good government. Back them with your advice, your leg work, and your checkbook—all three practical elements of successful political action.

USDA's wool processing research lab now in operation

■THE U. S. Department of Agriculture now has facilities for commercial-scale development and testing of new wool processing methods. On November 2, 1959, a $105,000 wool processing research laboratory at Albany, Calif., was dedicated.

Studies to develop wool fabrics aimed at improving wool's competitive position will be conducted at this laboratory which is a unit in the Western Utilization Research and Development Division of USDA's Agricultural Research Service.

The laboratory building has 18,000 sq ft of floor space and equipment for processing experimental lots of wool on the American worsted system—from raw wool to finished fabrics.

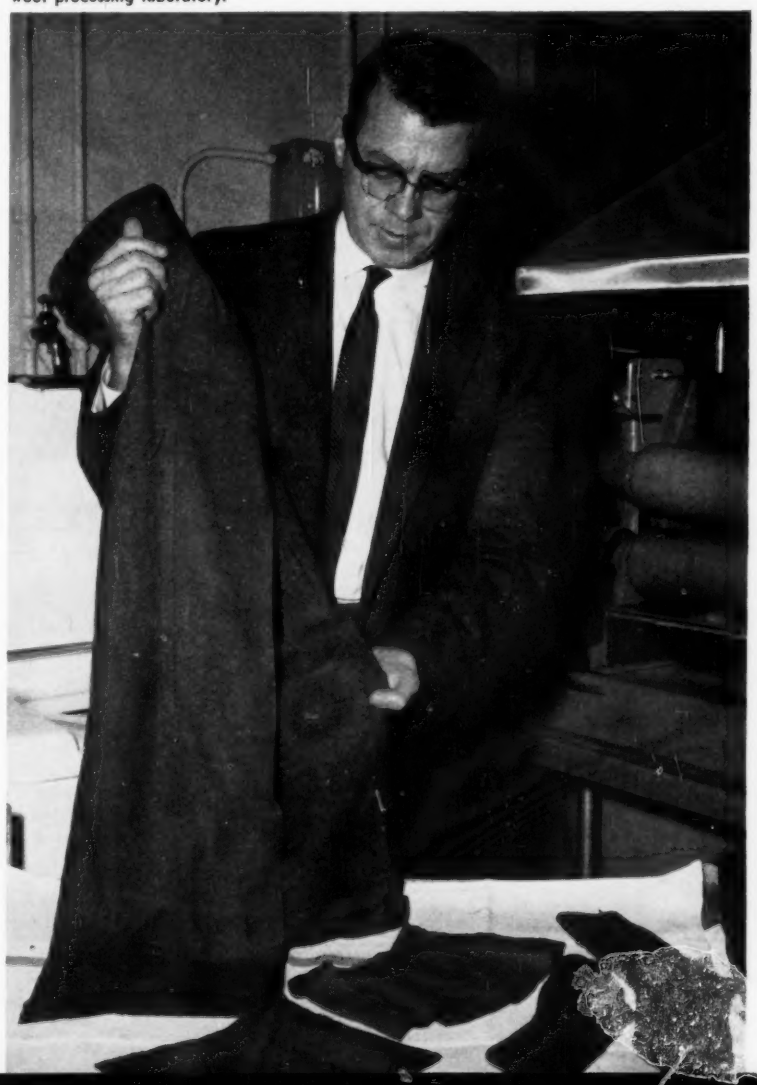
Recent findings by the division's wool and mohair unit offer the future possibility of soft wool fabrics that are washable in machines. (T. I. for May, 1959, p. 83). These treatments will be studied and developed further in the new laboratory. Studies will also be conducted on chemical treatments to impart other desirable qualities to wool and mohair, such as greater resistance to wear and soiling without sacrificing natural texture, soft drape, and flame resistance.

" . . . It is only in our lifetime that the man-made fibers have made important inroads into the traditional wool markets," said J. Earl Coke, vice-president of the Bank of America, in the dedication address. "Physical, chemical, and technological research of many kinds must be stepped up and broadened to support American wool growers in this struggle to preserve and strengthen a vital market for their product.

"Textile manufacturers cannot be expected to spend large sums for wool research when their interests are essentially indifferent as to whether the raw material they process is a farm product or a synthetic."

Representing the National Association of Wool Manufacturers at the dedication of the new facility was Dr. Werner von Bergen.

Progress which is being made toward development of minimum-care wool garments is illustrated here by Dr. H. P. Lundgren, chief of the wool and mohair laboratory of the Western Utilization Research and Development Division. One leg of the slacks and one each of the pairs of garments on the table in the foreground have received a new modified-resin treatment, developed in U.S.D.A. research. All have been washed in a home-type washer. The treated garments show marked retention of size, shape, appearance, and the normal good qualities of wool. The treatment will be studied further in the new wool processing laboratory.



TOUGH YARNS FOR TOUGH JOBS . . .

. . . FIRE HOSE, for example

Fire stream transmission lines must be engineered for the modern firefighter—increasing his efficiency, yet minimizing the dollar investment in equipment.

Caprolan nylon heavy yarns—a completely new class of durable textile materials pioneered and developed by Allied Chemical—have made practical a radically new manufacturing technique for fire hose. Caprolan's uniformity of filaments, flexibility and strength proved it to be the ideal raw material for the new method of coaxially spinning tubular hose—resulting in a high-performance product for both civic and industrial use.

Caprolan heavy yarns are now included in U.S. Navy specifications for marine rope, are used in the great majority of nylon and nylon-combination seat belt webbings produced in this country, and have pioneered the way to the successful use of textured filament nylon in carpet and upholstery.

If you have a tough job, we have the tough yarn for it. If you wish to improve an existing product, or create a new one, let us help you with our wide range of deniers in Caprolan nylon heavy yarns.

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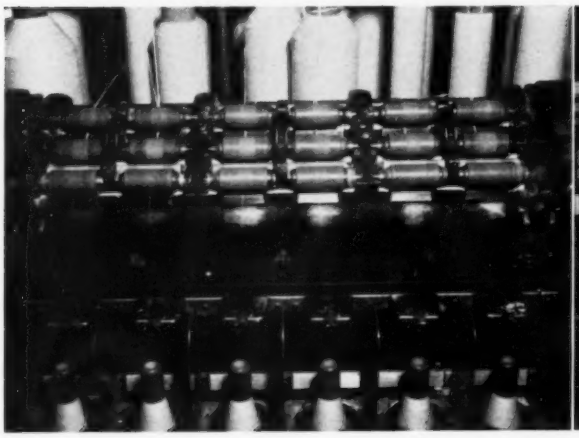
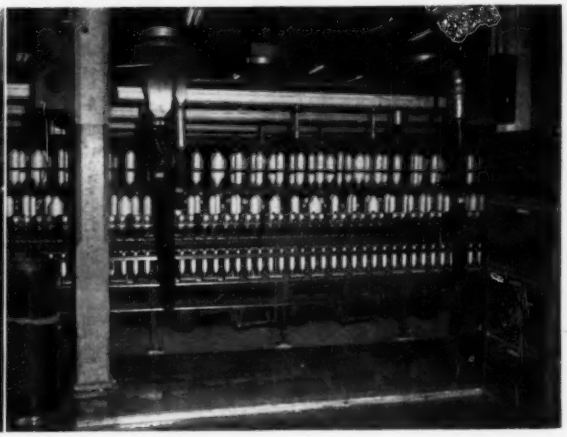
THE NYLON FIBER BY ALLIED CHEMICAL

Duo-Roth drafting replaced older Roth system.



Traveling cleaners keep mill spick-and-span like this.



"How we cut our spinning cost"

by Charles Dean
Russell Mfg. Co.

Abstract*

■ IN ONE OF our mills making warp yarn, we made changeovers on 113 Saco-Lowell 1913, 1916, 1920, and 1930 model spinning frames. In another mill making knitting yarn, we installed new Gwaltney 4" gauge, 3" ring, 10½" traverse, 240-spindle frames.

Our changeovers consisted of new ball-bearing spindles, rings, traveler cleaners, antifriction drafting units, and antifriction bearings on the cam, jack, and upright shafts in the head end of the frames. The antifriction bearings on the shafts were necessary to correct the bobbin build and help eliminate sloughing, since cheeses for dyeing and warping were made from these bobbins on two model D Barber-Colman spoolers. All of this changeover modernization was done by our own crew and only one frame was out of production at any time.

As this program got under way and was completed, the results were amazing—ends down per thousand spindle hours on 40s combed warp went from 30 to 17. With the drastic reduction in ends down and the 10 x 5 roving bobbins from the replaced 8 x 4 frames, the number of spinners was reduced from twelve to nine per shift. This savings alone amounted to approximately $31,000 per year.

Our 40s combed yarn went from 18.0 Uster Quadratic C.V. to 15.0, and the break factor from 2000 to 2500. The average ends down per thousand spindle hours over a two-year period in this mill has been 17 as compared with our previous average of 30. This includes warp yarn counts of 16s to 41s. During this same period of time our spooler production in pounds per 24 hours, from two model D Barber-Colman spoolers, increased from 7,975 to 10,694—an increase of 34%.

Cleanliness. In the mill previously mentioned, where we installed new antifriction, dual-apron drafting units, we put arms on our overhead cleaners extending downward to the bottom rail of the frame. These arms contained openings through which air effectively cleaned the frame from the creel to the bottom rail.

Trailing this traveling overhead cleaner, we attached another unit with arms extending down to the floor through which an air flow blows toward three centrally located openings in the spinning room directly under the frames extending down the length of the room. A vacuum in these openings under the frames removes all lint blown to them by the traveling floor sweepers to a dust house. Through this operation we eliminated two sweepers and two cleaners per shift.

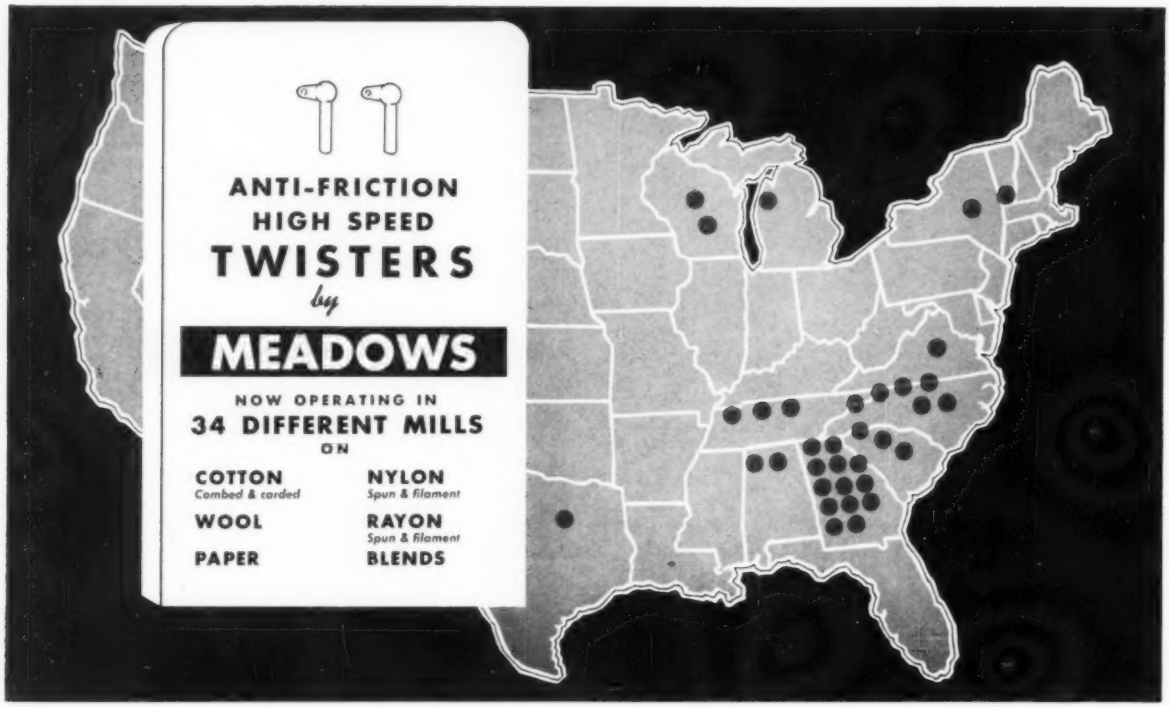
Quality. With increased spindle speed, numerous tests of many types were made. One series of tests was made on several makes of both nylon and cotton spinning tape. The various results from different makes of tape were amazing. We selected the brand of tape that seemed to have the best grip on the whorl and made the actual twist per inch close to the mechanical twist. Various travelers and bobbins were tested and the ones that performed the best were selected.

Through time and motion studies we found that our spinners could handle 120 operations per hour. With the increased front roll speeds we were running, we calculated the pounds of yarn per hour per frame and also the number of roving bobbins that would creel per hour. After extensive ends-down checks, we figured the average ends down per hour for each count, and by adding these ends down with the number of roving bobbins that would creel per hour, we had the operations per hour per frame for each count. The number of spinners' sides on 40s combed was increased from 25 to 34, and in the same proportion on other counts.

At the present time, the average spindle speed for our entire warp mill, consisting of 1913 to 1930 model Saco-Lowell frames with 2" rings, is 10,282 rpm. This is the maximum we could get with the 7½-hp motors on these frames. In an experiment to see just how far we could go, new 10-hp motors were installed on 10 frames. On these frames, on 40s combed yarn, we are running an average of 11,145 spindle speed, 135 front roll speed, 5,836 fpm traveler speed, and 23.7 ends down per thousand spindle hours.

With the use of larger roving packages in the range of 13½ x 7, and the new drafting units, the future holds unlimited possibilities for us in spinning. It will only be limited by our imagination and ingenuity.

* From a paper presented at a recent meeting of the Textile Quality Control Association.



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- **High capacity:** They run at much higher speed, and handle bobbins from 8 to 13 inches.

And because they run so much smoother, Meadows-equipped mills produce yarn of a superior quality.

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Forgotten resolution

(from page 67)

literature on industrial relations, heeds the advice of at least one full-time personnel specialist, and occasionally employs the services of experts skilled in supervisory development, personnel audits, morale surveys, etc.

The Will to Work will respond only in part to such a program. In fact, it is not unusual to discover considerable apathy towards work in a plant judged to be first rate in all phases of plant administration. How are we missing the boat? What factors demand a closer look?

The Doctrine of "Us and Them." One of the most pernicious notions afflicting some present-day employees is the belief that there are two sides to every question—the workers' side and the company's side. Where this idea prevails, you may be sure that the Will to Work has deteriorated.

Why should this attitude persist where the original justifications have long since vanished? There are several reasons; chief among these is the almost pathetic belief on the part of management in general, that "actions speak louder than words." Have not the professional labor agents, time and again, made the most sincere and generous of employee benefits appear to be the unadulterated work of the devil? Just as the best automobile needs advertising, the good intentions of management need hearing. It is high time that mill management changes its course of unintentional martyrdom to that of outspoken leadership. The Will to Work of our employees ebbs with every inadequate shrug of explanation.

Another factor behind the doctrine of Us and Them is the fact that employees are, for most part, treated as groups, not as individuals. This statement may offend the manager who spends a good part of his time entreating supervisors to recognize each employee as a person, and to deal with his problems of adjustment accordingly. The fact remains that employees are still paid largely by job classifications, regardless of individual performance. Because a couple of attempts at merit rating and individual incentive plan have "died aborning," many companies have permanently tabled further efforts. This would be considered unpardonable if the problem concerned production or quality. Believe me, gentlemen, it does!

Sometimes it's helpful to look at a problem from the aspect of making it worse. Supposing that there was a saboteur of industrial relations in an executive position within your plant. What could he do to foster the doctrine of Us and Them without being readily detected? Well, if he wanted to make people think as a group, he could arrange frequent occasions where they would be called together, say for the purpose of having some new system explained, which would have an effect on pay or working conditions. He might also arrange for some staff man from the main office to do the talking.

Our saboteur might also see to it that occasional "directives" are put up in each department, addressed to all employees therein. Particularly important would be the accidental oversight of not previously orienting the supervisors, so that they must read the notices for the first time with the employees. And so, on and on, little by little, without really thinking about it, the employees would come to regard themselves, and sometimes the first line of supervision, as Us, and everybody with a shirt and tie as Them.

The Business Man's Creed. Sooner or later, in some way or other, a man must let it be known where he stands. Employees are the same. They can't sit astride the fence of indecision for very long without feeling the urge to jump one way or the other. If you ask an employee what he thinks about the company he works for, you may not get a definite answer. But try a few specific questions and it generally becomes quite clear where he stands, and where the company stands with him. Realizing this, a number of company officials make it a practice to deliver occasional statements which are supposed to incline their employees toward the company side of the fence. The occasion may be a dinner to make length-of-service awards, or perhaps an annual banquet or picnic.

Imagine, if you will, the following fictitious, but all too representative scene. Everyone (employees, supervisors, executives, alike) is sitting at tables in a large room headed by one long table with a centrally located rostrum. At the head table there are seated two or three company officials, a guest speaker, and a number of employees. Suppose the refreshments have been consumed, the guest speaker has outdone himself with a humorous and informative speech, and the awards have been presented. Everyone is in excellent spirits as the chief official rises for the final speech of the evening. There is an atmosphere of "Now hear this!" Everyone feels that something serious and of general interest is forthcoming.

Before discussing his message, you should know a little about this official. First of all, he is known and respected in his own community as a man of principle. He has on numerous occasions quietly demonstrated his interest and willingness to devote his time to projects for the general good. His son is in military service. By and large, he is a man of religious conviction and patriotism. The employees, however, are not well acquainted with him.

After reviewing the company's economic position, the speaker talks about the future plans of the company for modernization, limit-

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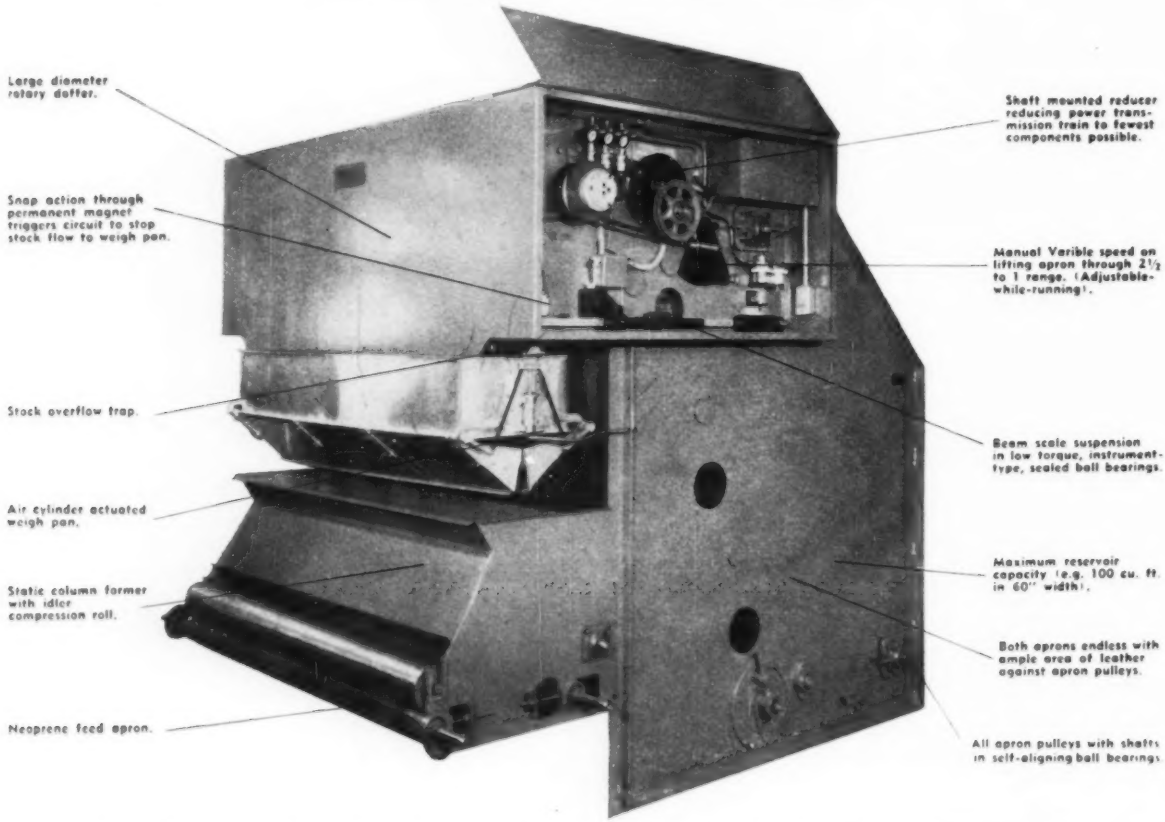
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The effect of the variation along with any uneven loading along the length of the weigh pan is minimized by the action of the column former in combining succeeding dumps. The result is a mat of stock, uniform in weight and density consistently to the feed rolls. The automatic Speed Change system prevents light weights being presented to column former due to fiber run-out. **IMPROVES PRODUCT — *Facilitates constant quality and cost control . . . reduces waste.***

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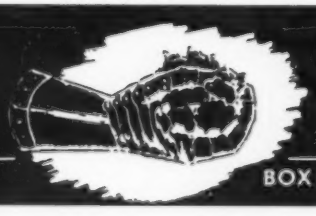

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ed expansion, etc. Then he comes to the conclusion. Now is the time for saying something of a unifying nature, something that everyone can carry with him to work each day.

"As we come to the end of this pleasant occasion," he says, "I hope each of you will remember that we all have one thing in common—our company. If our company prospers, then we will all share in the benefits. Job security is not just something we talk about, it's something that each of us can actually build in our day-to-day business life. I know that you all take pride in doing your jobs to the best of your abilities. I want to commend you for your past and present performance and to enlist your continued efforts for what can be a successful future, for the company, and for us all. Thank you and goodnight."

The official should not be criticized so much for what he said, but rather for what he did not say. In the last "war of containment" our army commanders observed that it was no longer possible to motivate the troops with the same slogans as before. No short exhortation seemed to fit. Consequently, many of the front line noncoms were forced to handle the situation by saying something like this, "Never mind why you're here, now that you are here, you're fighting to stay alive."

Are we working only to stay alive, to meet the next payment on the television set? Is the only advantage in supporting the free enterprise system, a higher standard of living? Do we have only one thing in common, a desire for economic security? Is the only reason for being in business, to make a profit? If the answer to these questions is "Yes" then what, one may ask, has happened to our historic love for the American way of life, for personal freedoms, for human dignity, for social equality? Is the foreigner blind who says "The only difference between the East and the West is the standard of living," or is he being a prophet?

For too long, the business man's creed has been limited to "A fair day's pay for a fair day's work." It is time that he remember that just walking into a mill does not necessitate his leaving behind many of the traditional attributes of a good citizen, a member of the community, the head of a family. Particularly should he not forget these things when he is trying to find common ground on which to unify company and employee interests.

Some Pitfalls of a Liberal Education. This kind of education came into vogue to meet the demands of a dynamic society. In some instances, technically qualified supervisors fail because they don't know enough about people. Similarly, there are students of the arts who aren't able to fathom the complexities of a leaking faucet. Then, there is the bulk of students who don't go to college and who must prepare themselves for a myriad of job possibilities. These are a few examples of why it is not wise to specialize to the extent of imposing a condition of mental myopia, or restricting unnecessarily one's economic worth.

Nevertheless, there is scarcely anything of so little value as "a smattering of ignorance." Some people only have to be exposed to a subject, others must be dunked thoroughly. Obviously, there should be some selection of future candidates for exposure or dunking. Thus, we would not have to choose between the extremes of panoramic viewing and microscopic examination.

Not only the method of teaching can be improved, and the selection of students, but the curriculum of every school should contain at least the irreducible minimum of facts and ideas necessary for present day economic, social, and political life. This is not to say that such a list is in existence, but certainly more people should give more thought to the matter. For example, should not every young man or woman who is released from high school be able to answer, reasonably well, the following questions?

1. What is an employee paid for?
2. What are the causes of inflation?
3. What is the function of the family unit in society?
4. What does the individual owe to the society of which he is a member?
5. What are the principles on which the democratic way of life is based?
6. What is the function of government under the free enterprise system?

If there were general agreement as to the answers to these and similar questions, would not the job of becoming a modern adult be much easier? Would there be as much thoughtless clamoring for higher general wages to offset the price increases from the last artificial increases? If there can be no general agreement to such questions, then education becomes simply a training ground for the victims of economic hogwash.

To summarize the foregoing, the attempt has been made to focus attention on one of our national resources, which is believed to be in danger of degeneration — the American Will to Work. Though we adhere to the various principles of human relations, employ all the best techniques of scientific management, etc., we have yet to evolve a really effective program to rehabilitate the Will to Work.

A careful analysis of routine plant procedures may reveal basic errors in the long range program to upgrade the individual and enhance his awareness of self.

The doctrine of Us and Them is just another aspect of the class psychology which is being used to stratify our society.

The business man's creed could stand a face lifting. This new look might well be broader in scope and encompass more than an oversimplified version of basic economics. Something is needed that will serve to show employees and management alike that they have more in common than the place in which they work.

In addition, we should be aware of the shortcomings of our educational system and be willing to help formulate a program that will make our students less susceptible to the propaganda attacks of those pressure groups which are hostile to the basic principles of our democracy.

Finally, it is hoped that in the future, each of us will systematically endeavor to fortify and cultivate the American Will to Work, so as to forever remove it from the list of Forgotten Resolutions.

SACM*

* Société Alsacienne de Constructions Mécaniques of Mulhouse

APPOINTS MEDLEY

SOLE USA AGENTS

Medley Manufacturing Company of Columbus, Georgia is proud to announce that it has been awarded the exclusive U. S. Sales and Service Agency for the complete line of cotton and synthetic machinery—opening through weaving — produced by Société Alsacienne de Constructions Mécaniques de Mulhouse, France.

SACM is one of the largest textile machinery manufacturers in the world, employing 20,000 people. They have been in business for 135 years.

They produce a complete line of textile machinery from opening through weaving on cotton, synthetics, woolens, and worsteds; also complete equipment for finishing plants. All of this equipment will be available to U. S. mills through Medley.

Of particular current interest is the SACM high-speed drawing frame. Trial installations of this frame will be started up shortly in the Carolinas and the Georgia-Alabama area. Details on request.

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YOUR HEADQUARTERS FOR TEXTILE MACHINERY FROM OPENING THROUGH FINISHING

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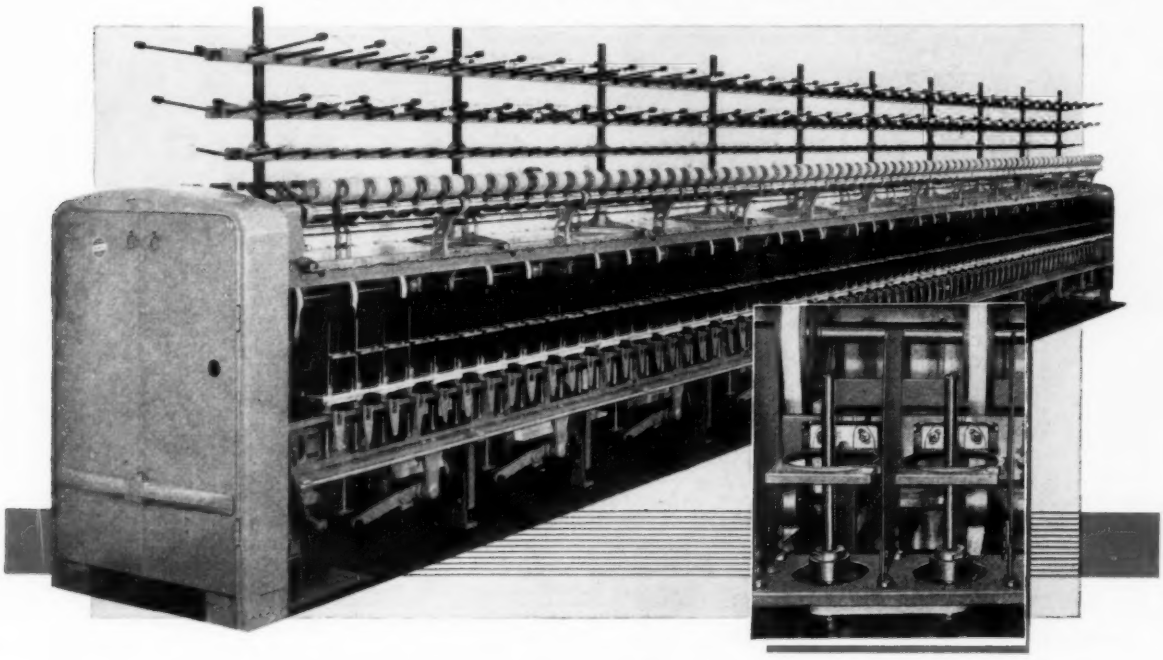
Introducing

the PACEMAKER* P-3

A NEW Twister for highest possible production on low twist synthetic yarns



The new Whitin "PACEMAKER" Model P3 Ring Twister has many unique features which provide for maximum twisting efficiency and lowest possible cost. It is capable of operating at exceedingly high speeds which makes it especially attractive for mills processing low twist synthetic yarns. This is definitely *the* twister for forward looking, profit-minded mills!

Examine these outstanding features — many of them exclusive with Whitin:

- ★ **Head end — entire gear train mounted on antifriction bearings — laminated bakelite gears combined with metal gears for quiet operation**
- ★ **Feed rolls — 3" or 4" dia. boss type-hardened steel, heat treated, with chromium plated finish, mounted in grease packed ball bearings**
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- ★ **Stationary bottom plate over spindles — insures yarn cleanliness and supports full length separators**
- ★ **Ring rail construction — magnesium rail supporting ring holders having Whitin patented Micrometer adjustment**
- ★ **Rings — up to 5", choice of several auto-lubricated types**
- ★ **Spindles — latest Whitin SUPASONIC, HZ 55 or 66, depending upon bobbin weight — either internal or external brake — an outstanding new development in spindle design**
- ★ **Winds — square bottom differential taper top, square bottom taper with straight builder, and P-1 differential double taper wind on straight pirn**

*TRADEMARK

These are only a few of the many features. For complete information, ask your Whitin representative, or write to —

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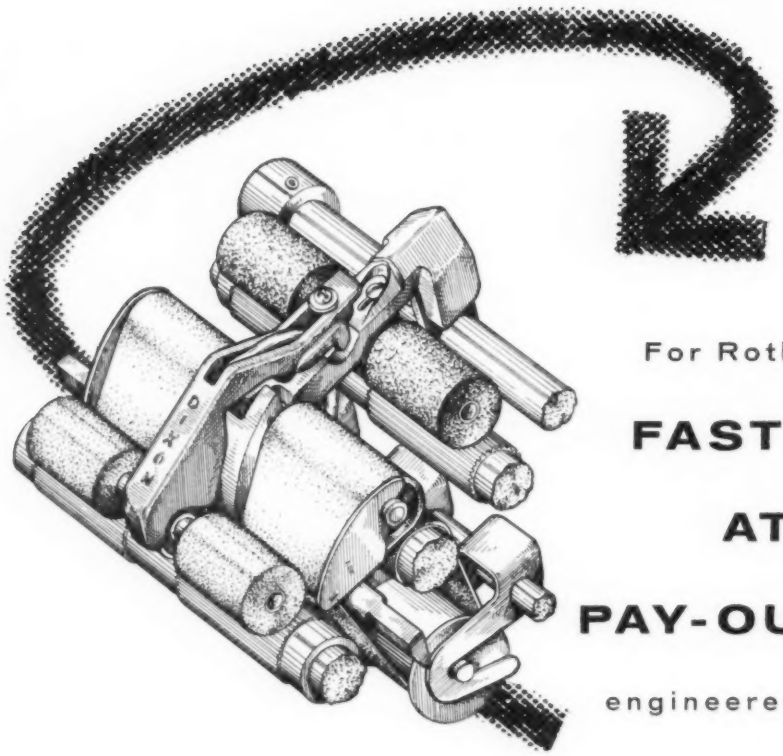

For Roth System Spinning...

FAST PAY-BACK AT MINIMUM PAY-OUT . . . with a Dixon engineered changeover plan

Dixon offers the perfect balance of a proven product plus engineering know-how . . . a combination which has produced many fast pay-back changeover plans for spinning mills*. Each Dixon plan is more than just equipment. Our engineers will gear the program to the mill's cash flow, helping to provide major economies on a systematic schedule.

While Dixon Spinning Changeovers are often installed complete in one operation, many mills take advantage of our multi-step changeover program. On Roth System Frames, the usual plan calls for first adding new middle top rolls, aprons, and cages. Immediate cost-savings result through less lubrication, fewer laps and ends down, reduced cleaning . . . AND LONGER DRAFTS!

Systematic completion of the Double Apron Roth changeover can be made to suit the individual mill. The final Double Apron Roth changeover eliminates all oiling and cap bars, increases drafts, and gives our customers the most competitive spinning efficiency:

- Middle and back rolls run on RULON . . . the oil-free bearing that never is lubricated . . . outwears nylon 12 times.
- The Dixon patented self-aligning front roll rides on a hardened and ground, pre-lubed, sealed, precision ball bearing which is guaranteed for years and years and never requires lubrication.
- All parts are maintenance free. Pay-back on your investment is a matter of months.
- Productivity and quality improve. Yarn is cleaner . . . seconds decrease.

Compare "Pay-Out versus Pay-Back" on *both* Roth System changeovers being offered to the trade and you'll buy Dixon. Ask for our detailed report showing how an actual installation was completely paid for in 25 months and is now saving $1.50 per spindle per year by using Dixon Changeovers.

Dixon Corporation, Bristol, Rhode Island. Southern Sales: Dunson & New, Inc., Box 9202, Greensboro, N. C.; Box 321, Greenville, S. C.; Box 445, West Point, Ga.

*Here are a few of the more than 2,000,000 spindles installed:

Mill	Spindle	System
Deering Milliken	121,500	Double Apron Roth
J. P. Stevens	72,800	Double Apron Casablancas
Clinton Cotton Mills	85,612	Double Apron Casablancas
Crompton Highland Mills	10,300	Double Apron Roth
Adelaide Mills	12,122	Double Apron Casablancas

Dixon

Engineered devices for weighting and guiding top rolls since 1876

Labor law

(from page 63)

REPORTING REQUIREMENTS

Title II deals with the subject of reporting.

Three groups must file reports. The first group consists of union officials and employees. The second group consists of employers, and the third group consists of labor relations consultants.

In this connection it is important that certain of the evil practices disclosed by the McClellan Committee are not specifically prohibited under the new law. Reliance is placed on disclosure or reports, the belief being that public knowledge will tend to bring acceptable standards of conduct in the various union activities.

As for reports by unions, much of what they are now required to report also had to be reported formerly under Section 9 (f) of the Taft-Hartley act. The principal differences are that *(1) all unions must now report* rather than only those wanting to use NLRB facilities, and *(2) reports will now be made public.*

Every union, regardless of size, must adopt a constitution and by-laws and file them with the Secretary of Labor. There must also be filed a report of basic information about the union and its practices, relating to such matters as qualifications for membership, the manner of levying assessments, election or removal of officers, and provisions for authorization of strikes.

Reports from union officials are also required, the object being to obtain disclosure of financial interests which conflict with those owed to union membership. The House Committee report makes it clear that no union official need file a report "unless he holds questionable interest in or has engaged in a questionable transaction."

Businessmen are especially interested in the reports required for employers and consultants.

Employers must report undisclosed payments to employees when the purpose is to cause these employees to persuade fellow-employees to exercise or not exercise their collective bargaining rights. Employers must report any expenditure during the fiscal year designed to interfere with, restrain or coerce employees regarding their rights to organize and bargain collectively.

I want to amplify a bit, however, on a further item which employers must report. They must report any agreement whereby a labor relations consultant undertakes to persuade employees regarding their rights to organize and bargain collectively.

If you, as an employer, for example, hire a labor relations consultant to write a series of letters and send them to your employees regarding a union which is attempting to organize them, you would have to report this agreement as a requirement under the new law. You would also have to report any payment made by you as a result of such an agreement or arrangement.

However, if the consultant merely advised you about the letters and you wrote them yourself, it appears you would not have to report the matter. This requirement regarding the use of consultants has caused alarm in certain quarters because its effects could, at times, be very exacting.

It will be more of a burden on small employers, moreover, than on large ones. The larger employer, under the example I have given, would have an expert on his own staff, who would write the letters I have mentioned. The small employer, however, who needs the outside consultant to help him, would, under some conditions at least, be burdened with making these reports. The result is anything but fair to the little fellow.

Labor relations consultants must file reports of any activities by them, such as writing the letters I mentioned, designed to persuade employees concerning their bargaining rights. Thus, the way the law was written, the employer and the consultant are in a sense compelled to police one another with respect to reports they should file regarding the agreements as mentioned in the law.

Attorneys are protected from being required to expose matters communicated to them in the course of a legitimate attorney-client relationship, so they stand in a different category from consultants who are not members of the bar. There is no certainty, however, as the law is written, that the employer would not be required to report from his end, an agreement entered into with an attorney unless the attorney is merely giving advice. This entire question of exempting the attorney from reporting, moreover, is a difficult and uncertain one because what is meant by an attorney-client relationship in the labor relations field, involves new developments in the law and is not so clear as it is in some of the older and more settled areas of the law.

Wilful failure to file the required reports is punishible by a fine of not more than $10,000 or imprisonment of not more than one year, or both. Apparently the person who honestly tries to comply with the law could not be guilty of wilful violation and therefore could not be subject to its criminal provisions. Good faith efforts to comply would be of great importance for the person accused of failure to file required reports.

TRUSTEESHIPS

The third title deals with trusteeships. I mention this title only quite briefly.

As all of us know, trusteeships over local unions have been a device by which some corrupt union bosses at the top have made a mockery of democracy and exercised power over unwilling members in the locals unjustly placed under trusteeship.

The new law undertakes to place limits on the use of these trusteeships and to provide assurance that the local will be returned to self-government with reasonable expedition whenever the needs which created the trusteeship have been satisfied.

ELECTIONS

Title IV which deals with union elections is a further provision written into the law to guarantee union democracy.

Secret ballot elections are required at least every five years for national union officials, every four years for intermediate body officials, and every three years for local officials.

The new law requires that notice of elections be given every member and that each member have an equal chance with others to nominate candidates.

Candidates are assured equal treatment in the distribution of campaign literature. Candidates for offices are entitled, prior to an election, to inspect the membership list maintained by the labor organization, providing the members are subject to a collective bargaining contract which requires union membership. Candidates are entitled, moreover, to have an observer at the polls and at the counting of the ballots.

Funds of the labor organization received by way of dues or assessments, and similarly monies from an employer, cannot be used to promote any candidacy for union office.

A victim of dishonest election procedures, who cannot get relief under union procedures, is entitled to file a complaint with the Secretary of Labor, who is authorized to take action regarding such matters in the United States courts. In those states

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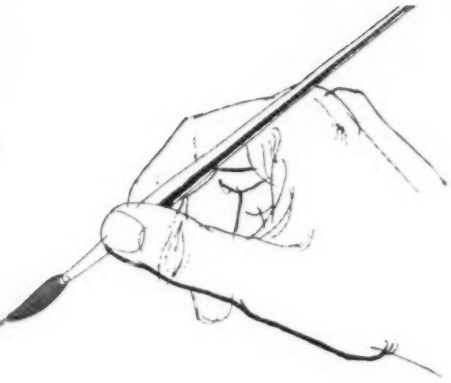
DYEING & BLEACHING MACHINES

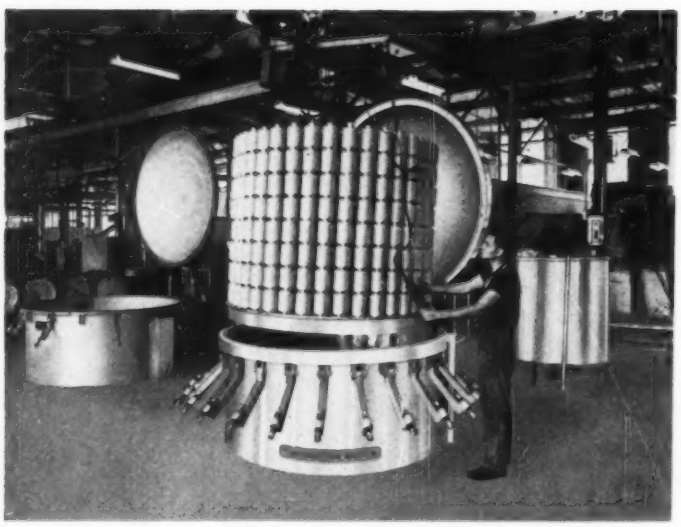
provides the

Finishing Touch



to the plant seeking

MODERNIZATION! GREATER PROFITS!



Whatever modern equipment is used in manufacturing yarns or fabrics, *quality* cannot be obtained without *quality* workmanship and equipment in the dyeing, bleaching and finishing operations.

Production and labor costs can be reduced substantially by investing in a MORTON SYSTEM INSTALLATION.

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Manufacturers of THE MORTON SYSTEM Machinery for Dyeing and Bleaching of
BEAMS • PACKAGES • STOCK PIECE TOPS • VALVES • PUMPS • BEAM AND PACKAGE EXTRACTORS AND DRYERS • DYE BEAMS, ALL MAKES AND DESIGNS DYE TUBES • DYE SPINDLES • TUBE SPACERS • CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS

where relief could be had in the state courts, the use of such courts is still allowed, but once federal jurisdiction is invoked in an election, such jurisdiction becomes exclusive.

SAFEGUARDS FOR UNIONS

Title V deals with some safeguards for labor organizations. The safeguards are financial ones, largely.

First, all union officials are placed under a fiduciary duty. They are held accountable as fiduciaries for funds and properties under their control and must pay over any profits to the union which they personally receive because of transactions involving the union. Embezzlement of union funds is made a federal crime and individual union members are given authority to seek to recover union funds or property.

Second, the title requires every union official or employee who handles union funds to be bonded. The bond required is a personal one, as distinguished from a position bond.

Under this section, loans by unions to officials or employees in sums of more than $2000 are made unlawful.

People convicted of certain crimes or who have been members of the Communist party are barred from union office for a period of five years unless certain official determinations are made which would establish their fitness for union office.

This title, moreover, amends the Taft-Hartley act—the section known as 302—to outlaw money paid by employers or employer agents to employees for the purpose of influencing other employees in their rights to organize and bargain collectively.

It deals with the unloading fee racket, outlawing demands by a union or its agent for money from the operator or the employer of an operator of a truck as a fee for unloading the cargo of the truck.

MISCELLANEOUS

Title VI is officially labelled "Miscellaneous Provisions." The label is a good one because the provisions can not be classified under any one category.

It gives the Secretary of Labor quite broad powers which I will not discuss here, but they will be of great concern especially to labor lawyers and criminal lawyers.

The title specifically makes picketing for the personal profit and enrichment of any individual a federal crime, with a maximum penalty up to $10,000 and up to 20 years imprisonment or both.

There is a very important provision under the title that unless there is something in the new law specifically to the contrary, both state and federal laws dealing with responsibilities are preserved.

Among the other miscellaneous provisions of this title, is one which makes it a criminal offense, with a fine up to $1,000 and imprisonment up to one year, or both, for any person to use violence to deprive any member of a labor organization of his rights under the law.

TAFT-HARTLEY AMENDMENTS

Title VII embraces the famous Taft-Hartley amendments which have been an area of controversy ever since the current labor reform legislation was first proposed.

The best features of the Title VII provisions that finally were written into the new law are those dealing with secondary boycotts and picketing. As of now, it appears that the secondary boycott loopholes are pretty well closed. Exceptions are clothing manufacturing and construction, where certain limited types of hot cargo agreements are specifically made lawful.

Under the boycott provisions, unions are specifically allowed to continue publicizing their demands for a boycott, *except by picketing*, if their publicity does not interfere with work or pick-up and delivery service at the secondary employer's establishment.

For the first time, Congress seems to have questioned the broad protection that has been thrown around picketing as free speech. Picketing to force an employer to recognize a union or to force employees to accept it as their bargaining agent is outlawed when:

1. Another union is lawfully recognized, or
2. There has been an election within the preceding 12 months, or
3. A petition for an election has not been filed within a reasonable time, not to exceed 30 days.

A union, however, may picket or publicize that employees of a particular employer are not members of the picketing union or that the union does not have a contract with the employer, unless the picketing induces persons elsewhere not to work or provide pick-up and delivery service to the place picketed. However, injunctions to halt so-called blackmail picketing are banned if there is a complaint by the NLRB that the picketed employer has dominated or interfered with the formation or administration of a union.

Small employers will no longer be left out in the cold. State courts and agencies can handle their disputes when the NLRB refuses to do so because of too small a volume of business under NLRB jurisdictional standards. This provision should help, but it is doubtful that it will open up the NLRB bottleneck.

Concurrent jurisdiction with the states as to all cases was not written into the law and appears to be almost a necessity if the damaging delay of two years for adjudicating unfair labor practice cases is to be remedied. In an effort to lessen the workload however, the new law does grant authority to the NLRB to delegate the processing of election cases to the regional directors. An appeal to the Board is possible if the Board sees fit to provide for it, but the director's action need not be stayed pending appeal.

There will be much concern among employers who know NLRB matters, as to the practices and rules ultimately laid down by the Board for handling these election cases in the regions. Too much expedition of such cases could prove to be a denial of due process—another way of saying that they could be handled in such a way as to work unfairly for employers.

Legally replaced economic strikers can be given voting rights under the new law for a period of 12 months after the strike begins. Some critics view this as something which will make it very difficult for employers to oppose a strike, no matter how right they are. The change is sort of boost for the philosophy that all strikes should be won.

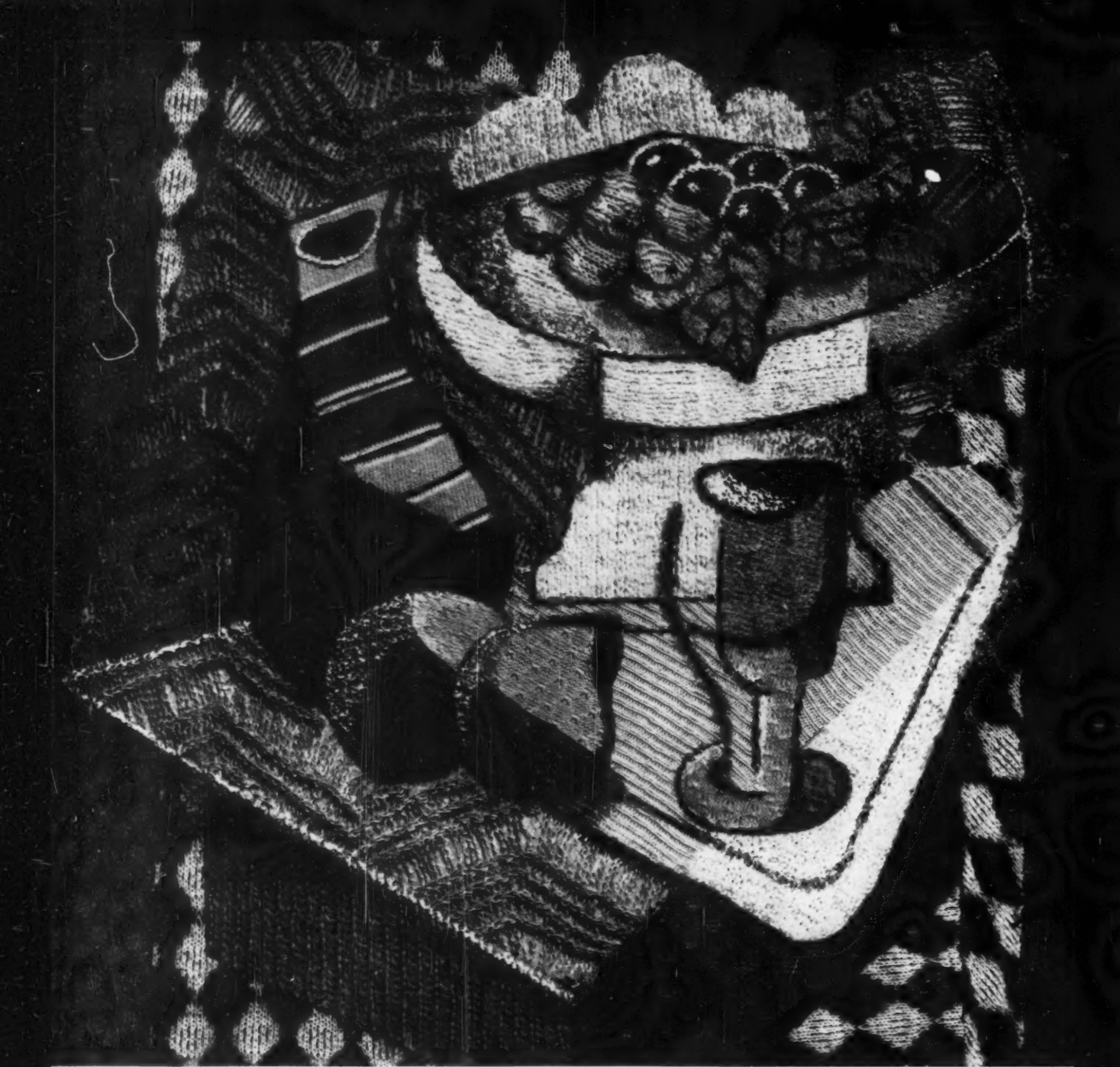
THESE ARE, in broad outline, the main features of the new law.

It is not a panacea for all evils.

Employers are going to find, after a few months, that they still have plenty of problems. The basic problem of union monopoly power is not touched in this law—neither is the problem of violence in labor disputes, the use of compulsory dues money for political expenses, and numerous other evils that could be mentioned.

On balance, however, the law is a gain for a people who wanted effective reform.

Our job now is to live with it, improve it through amendment as experience shows necessary, and ultimately develop a complete body of a labor law which will make for a fair play on both sides and guarantee the kind of labor-management relations that good citizens want our country to have.



Still life in **knitted fabrics** based on the style of Juan Gris, Spanish-French cubist of the early 20th century

FINE ARTS IN KNITTING... The craftsmanship shown by a recognized artist is the result of experience and mastery of materials. Brushes are selected carefully, for brush strokes are an artist's trade mark. In knitting too, one tool is all important. It is the needle, for fabric quality depends on needle performance. Arrow Latch Needles, made by one of the world's leading knitting machine builders, reflect years of know-how in each polished surface. Specifically designed for particular jobs, all Arrow Latch Needles are produced to help you maintain the quality that maintains sales.

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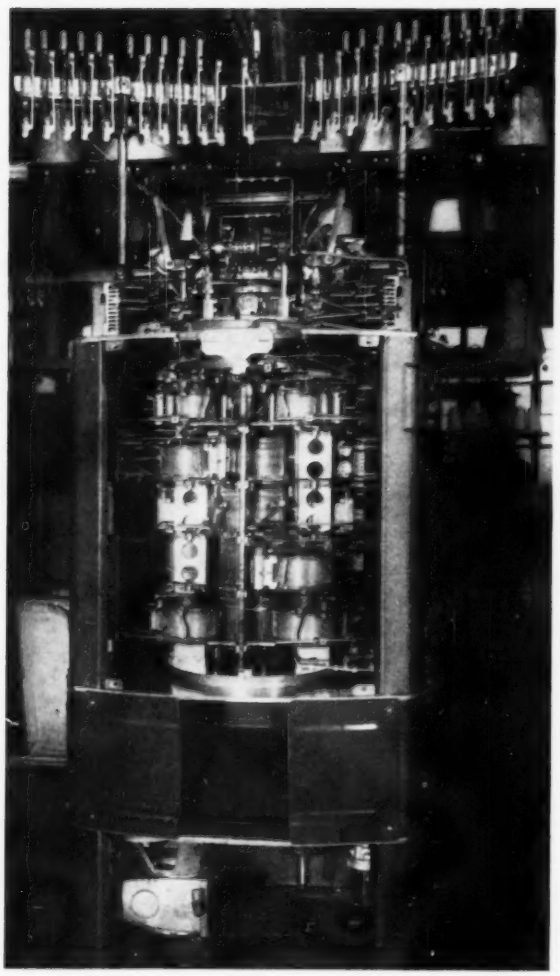
KNITTING SECTION



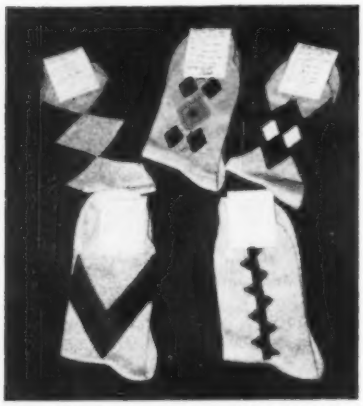
A year with the CK-A

"Not only have we explored its tremendous possibilities, but we have been confronted with a few of its limitations, and each must be carefully considered to obtain peak performance . . ."

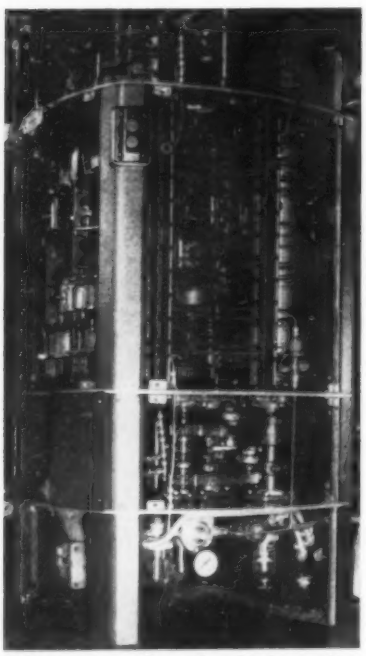
by Winston Shewmake
Exclusive

A BATTERY of CK-A circular knitters has been in operation in our plant for over a year. During this time we have learned much about the machine that only experience will teach. Not only have we explored its tremendous possibilities, but we have been confronted with a few of its limitations, and each must be carefully considered to obtain peak performance from the machine.

We have found the CK-A machine to be of sound construction, with much mechanical and patterning versatility, and it is easily operated by a knitter. The machine offers a variety of gauges which will produce men's and boys' fancy patterned socks. The



"Especially are we intrigued by the great variety of patterns which may be produced. . ." The different patterns in the unfinished socks pictured here illustrate the versatility of the CK-A.



"Although some fixers thought the machine was very complicated upon first observation, they have learned that even though the machine does incorporate many complex assemblies and sub-assemblies, these take on a bit of simplicity by the use of similar sections throughout the machine. . ."

range of gauges includes 36 gauge, 168 needles; 18 gauge, 112 needles; 12 gauge, 84 needles; and 18 gauge, 84 needles. In these gauges the machines may be obtained either plain or with an overplaid attachment. We have been running both types in our plant, fully automatic, nonstop until some breakdown occurs.

Versatility. In more than a year of operation, these machines have revealed one thing of paramount interest to us, namely the large range of patterns possible. The four feed stations of the CK-A are arranged around a vertical press-type jack cylinder and enable the needles to be selected for knitting by patterning trick drums at five different levels.

The machines are equipped with a forward and a reverse pattern trick drum at each of the four patterning levels. Two additional pattern drums are located at the master jack level and are used to control the selection of needles while knitting the heel and toe pocket of the sock. We especially appreciate this improvement since it eliminates the use of picks, which any fixer knows are anything but trouble free.

The patterning versatility is extended through more than 24,000 trick jack steps on a 150-rack set up and offers a real challenge to the pattern designer. This versatility has opened up for us a scope of patterning which was impossible to produce heretofore, except for some of the WK-A designs. For all around patterning, CK-A excels even the WK-A designs and one is able to produce some solid-color designs which were utterly impossible to knit on the other type of solid coloring machines which we have been running for years.

We Like These Points, Too. Another interesting improvement which we noticed immediately was that the needles stay down, buried in the cylinder slots, except when receiving yarns from the feed fingers for knitting the loop sections. This greatly reduces the strain on and lateral wandering of needles and thus affords less possibility for needle breakage and smash-ups at the knitting head. Another aid in the prevention of smash-ups is the automatic stop motion, which operates electrically when there are broken needles and/or broken yarns.

Each CK-A machine is equipped with an individual ¾-hp motor. This can be appreciated since machines can be run without a shaft. Knitters in our plant move completely around these machines without the worry of being caught in a line shaft, which experience has taught us can be very dangerous.

Standard equipment also includes an automatic controlled-mist system of lubrication. This system automatically sprays a mist of oil onto the vital parts of the machines by air pressure supplied to the machines from the plant's compressed air tank. This spray is not continuous, but operates at predetermined intervals.

Our fixers who work on the CK-A do not carry an oil can and do not have to worry about lubrication assignments. (A word of warning: Do not let your compressed air system accumulate too much moisture. To do so will defeat the lubrication system as well as spray water onto the needles and knitting head, thus causing rust and malfunction of parts.)

Other Tips from Our Experience. Our year on the CK-A has taught us other things. It is a high-production machine, a gratifying fact to the hosiery manufacturer. But since it is a high-production machine, it will, if unattended during a period of malfunction, produce a dozen bad socks as well as a dozen good ones, and do so in a hurry. Also, we have learned that a fixer must be fast in his repair work on the machine, because to have it down even for relatively short periods means a loss of many socks.

Changing patterns must be done quickly to prevent a great loss in production from down-time during change. Parts which can be prepared beforehand should be ready for the changeover, and several men should be assigned to the task of changing the machine instead of letting just one man drag the change along for several weeks.

The fixers and knitting personnel in our plant who have been operating the CK-A machines for the past year are well pleased with this new product and the many advantages it has to offer. Especially are we intrigued by the great variety of patterns which may be produced on it and the easy accessibility to the operating parts.

Contrasts in texture—Man's tennis shirt styled by PRM-Milan, knitted on a flat bed machine using 300 total denier package-dyed Astralene C yarns. Ladies' cowl sweater designed by Celli was knitted on a flat bed machine using 1200 total denier package-dyed Astralene C.

No torque in new bulk yarn

Will it do for knitwear what nylon did for hosiery, as its inventor predicts?

by TI's European correspondent

Exclusive

ALREADY there are in production some 11,000 spindles of the new machine for making the recently announced Astralene C and Astralon C modified filament yarns. This new type of yarn is of the high-bulk, low-stretch type, but completely free from torque and made in a single-cycle process.

The process was originated in England by Cheslene and Crepes Ltd.; the firm has come to an agreement with the Scragg Group, who will build the frames and license manufacturers throughout the world to make this type of yarn. It is planned to include a quality control scheme in the license so that the yarns will meet specified minimum requirements.

In Britain, Imperial Chemical Industries Ltd. purchased the rights to the process and, as far as the British market is concerned, they will control production of the yarn through licensees appointed by them.

The yarns will, presumably, all be of the polyester type, made from Terylene produced and supplied by I.C.I., and these yarns will be sold in Britain under the separate trade mark, Crimplene. Already it is reported that there is a potential production capacity of some 67 tons per week of Crimplene with the 11,000-spindle capacity, but there is a severe filament polyester yarn shortage in Britain, particularly in the new special deniers intended for this type of processing.

Although no figures have been given about rate of production on the new machine, based on the above figures, which apply to 150-denier yarns, the production per unit—the expression spindle is not used by Scraggs—per week,

Veneziani-styled 20 x 20 npi interlock dress from single 150-denier Astralene C yarns. Screen printed in eight colors.

would be about 13½ lb.

The published rate of production for a Ban-Lon spindle—this being the fastest producing yarn texturing yarn system at present—is some 48 lb per spindle per week on 70-denier yarns. This means that Ban-Lon production is still faster than that of Astralene C, although the new Scragg system is significantly faster than other texturing methods, particularly false-twisting.

Mr. Nava, of Cheslene and Crepes, inventor of the process, has said that "These yarns will be for knitwear what nylon is for stockings." And although this may appear to be optimistic in the extreme, it would seem from data released about the yarns and fabric samples so far seen, that they might well prove to be ideal for this trade. Work is moving rapidly forward in evaluating them for woven structures and already Wormalds and Walker in Britain have made blankets from them which rival the loftiness and softness of acrylic fiber blankets.

ASTRALENE C is made by a unique, stabilized high-bulk process and with complete electronic and mechanical control systems; the machines are reputed to be able to make an extremely wide variety of yarns.

At present the range is designated by an arbitrary series of numbers—Types 85, 90, 95, and 100. As the figures advance, the bulkiness increases.

Already dyed yarns in a range of deniers, in singles and ply, are available in Britain.

In the knitted fabrics used for printing, a Type 101, 1/150-denier Terylene has been selected. In a plain interlock construction of 20 x 20 needles per inch, the cloth displays no torque characteristics or twisting tendency, even though singles yarn has been used, while the cloth itself is quite opaque.

The process is reputed to "confer complete chemical dyestuff affinity" to the polyester and also to nylon yarns. (The significance of the entire project, however, is based on its success with polyester yarns). This means that no matter to what degree of bulkiness the yarn is textured, the dye affinity will remain exactly the same and also quite even.

IN TEXTURING, the yarn's individual filaments are given undulations of a permanent character and in a single plane. This means that at no time do the yarns display twisting or torque characteristics. As far as the knitwear industry is concerned, this is of considerable advantage as it is now no longer necessary to knit alternate courses with "S" twist and "Z" twist yarns.

Two big savings emerge from the Astralene C processing system. The first results from the no-torque characteristic, which means that to have a yarn without twisting tendency it is no longer necessary to double two ends of opposing twist as with false-twist yarns.

The other advantage is that the delivery package from the Astralene C unit can be removed and at once pressure-dyed. It is not necessary to wind the yarn on to "muffs" for dyeing and then rewind into a final cone.

As the setting temperature applied to the yarn during texturing is relatively high, it is not necessary either to preboard or postboard knitted garments made from these yarns. It is also even possible to boil the yarns without disturbing the crimp in them.

Astralene C yarns can vary from soft and silky to heavy bouclé crepes. Compared with a conventional false-twist yarn, Astralene C can give a covering capacity of 25% more, assuming comparative yarn counts are the same.

On terms of weight, Scraggs report that comparative yarns of Astralene C will give 50% more covering capacity than the equivalent weight of wool.

IN BRITAIN, as elsewhere, the textured filament yarn producers have found that a serious trouble with most yarns is "pickiness." This is the thing that makes one's hands feel rough when handling fabrics made of these yarns. Most of the Astralene C fabrics so far handled have not displayed this fault. It is attributed to the fact that the crimp in the yarn is perfectly even, and for each filament is along a definite plane. Thus there are no loops emerging from the surface and this also means that the danger of pilling, caused by loops pulling up into unsightly pills is very much reduced.

To launch the Crimplene project in Britain, I.C.I. has introduced some new filament yarns specially for this form of processing. One is 2.1-denier per filament and is 150-denier, 72 filaments; while the other is a fine filament of 1.56-denier, in a yarn of 75-denier, 48 filaments. This fine yarn is particularly well suited for making very soft and silky fabrics. Introduction of two special yarns for this type of processing is intended to give British manufacturers a good chance of developing new constructions that will be competitive with and even superior to the other yarns now on the market.

Although processed at high temperatures, Astralene C polyester yarns can be permanently pleated without the yarn itself having its properties affected.

In knitwear the only after-processing required is to give body-length garments a light scour for about 5 minutes at 122 F, followed by tumbler drying. Shrinkage following this is about the same as for wool—6%—but no further shrinkage need be expected as the garments are then quite stable.

As the plan stands at present, Astralene C applies to polyester yarns and Astralon C to polyamide yarns, but already tests have been made on other filament thermoplastic yarns, such as the polyacrylics and polypropylene, so it may well be that before many months have elapsed we shall see a completely new range of modified filament yarns reaching the market.

Mill uses seamer to close half-hose toes

■ AT THE plant of the Adams-Millis Corp. in High Point, N. C., a new method has been developed for closing the toe of men's hose, according to information received from this seamless and full-fashioned hosiery manufacturer which in 1958 announced production of the Getaz toe or loopless toe ladies' seamless nylon stockings (T.I. for July, 1958, pp. 122, 123, 131).

By this new method of toe closing, which is said to produce a construction that is preferable and to solve some of the problems of manufacture, the toes are seamed, rather than looped, with the Ledwell three-thread, flat-butted seam made on a two-needle Merrow M-4D-45 machine (the same model seamer used to close the loopless toe nylons mentioned above).

According to Adams-Millis, the Ledwell method of closing toes avoids the open spaces which are left between the stitches of socks of coarser gauges (108 or 84 wales) as the seamer inserts two or more stitches to each pair of wales, producing a closed seam which can scarcely be distinguished from the fabric of the hose. Also, a flat, smooth seam is produced in socks of finer gauges such as 176-needle styles made of cotton, wool, or stretch yarns.

Knitting is unchanged except to eliminate the looper line, it was pointed out. Appearance of socks made of colored yarn is improved as there is no need for the white courses adjacent to the looper line to make it easy for the looper operators to see the loops.

Furthermore, the fabric is contracted in width while the loops are being seamed, the back feed being half or less than half as fast as the front feed. Consequently, hose are boarded more neatly and easily.

Stitches per wale, both inside and outside, vary according to gauge and weight of sock. Using a 30 eccentric cam feeding in and a 70 eccentric cam feeding out, causes the fabric to feed in faster and feed out slower, thereby resulting in a slight arc for better fit and comfort.

Commenting on the new half-hose toe closing method, T. Lynwood Smith, vice-president of Adams-Millis, said:

"Our current production ranges from coarse 60-needle to fine 200-needle goods. Combination eccentric cams produce a satisfactory closure, free of beards from cut loops and puckering. Production averages from 120 to 145 dozen per eight-hour shift. A nine cent per dozen rate will approximate average looper earnings. Operators can reach maximum production in three to four weeks. We are operating a second shift which heretofore has not been feasible in looping.

"Wear tests were amazingly good, and abrasion tests prove the Ledwell closure two or three times stronger than conventional looping."

Other mills are being licensed to use the process by The United States Trust Co. of New York, 45 Wall St., New York 5, N. Y., assignees of the patents pertaining to the method, Mr. Smith said.

Production increase *(from page 80)*

tude of cyclical variations but also determine their frequency. This provides means by which we can single out the specific elements in the machine causing a particular disturbance. Demands for improved machinery based on this kind of demonstration cannot long be ignored, and as a result we now have anti-friction top rolls that can be buffed on their own bearings with maximum runouts under .003" and bottom steel rolls that will run in their own anti-friction bearings with less than .002" runout. Again, spurred by our ability to track down the cause of cyclical variations, we are looking with suspicion on gear eccentricity. As a result, such precision finishing equipment as gear shavers are beginning to show up in our shops. . . .

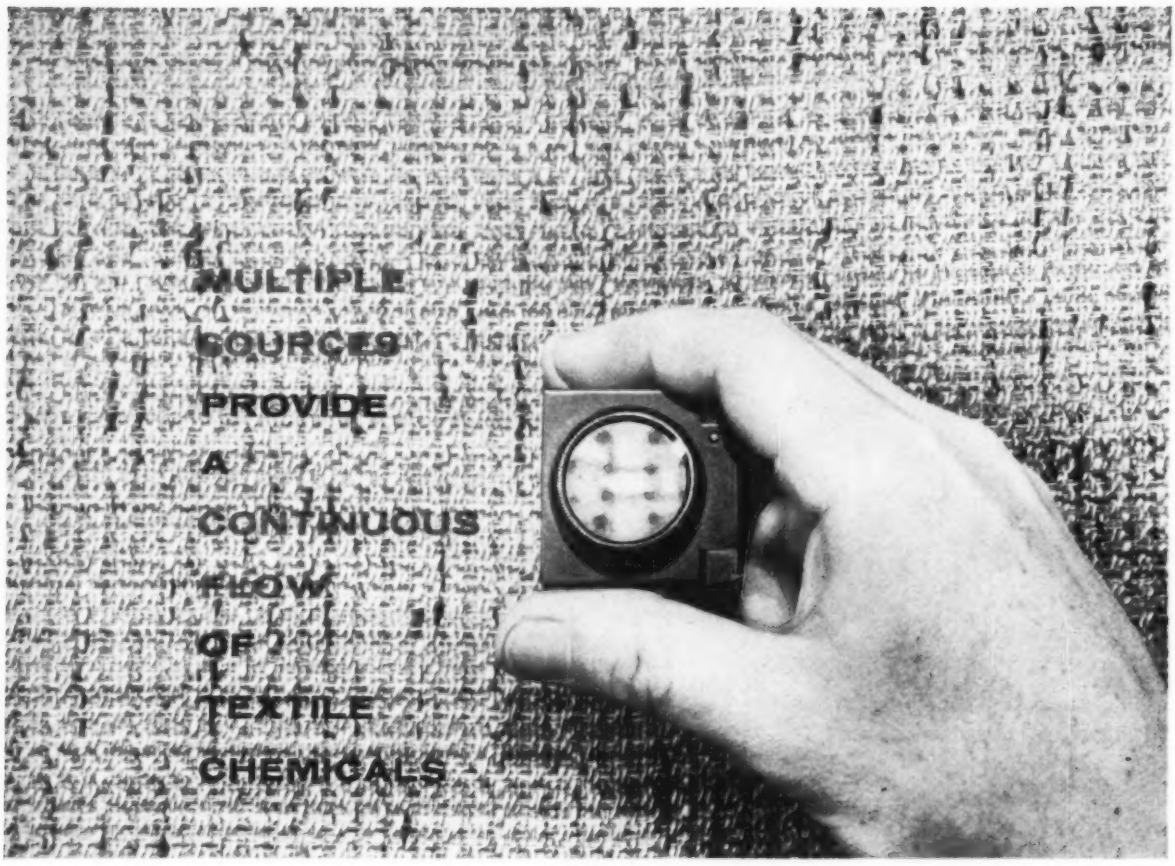
"Electronics in the card and spinning rooms may be destined to play an important role. Measurement is the first step in any control process; and now that we have electronic means of instantaneously measuring yarn or sliver variation, it remains but to develop a system of adjusting drafts that has sufficiently fast response so that automatic size control can be realized. It is no longer any secret that Saco-Lowell is working on this very project [see accompanying illustration] . . .

"The economics of package size in spinning is very complex. Even specialists in the field are having a hard time agreeing on the optimum size. With a limited knowledge of mill operation, it is only possible to make the obvious observation that the trend is toward larger packages; and progress in this direction will depend on how successful we are in overcoming the restricting factors of power consumption and traveler speed. . . .

"Continued effort is being made to reduce installation time. Some equipment, such as draw frames, is now being shipped fully erected. Longer machines, like spinning and twister frames, have been shipped erected in sections.

"People associate good looks [of processing machines] with good performance. It can be argued that good appearance offers real benefits to machinery users. It inspires a certain amount of pride in operators towards their machines; it makes for pleasant surroundings in which to work; and favorably affects morale and efficiency. Most machinery producers now feel that appearance is important enough to retain a consultant industrial designer to advise on problems of arrangement, form, and color."

An example of the use of electronics in the card room is the electronic automatic drafting control system which has been developed for use on Saco-Lowell's Versa-Matic drawing frame. Pictured here is a prototype of this frame on display at the International Textile Machinery Fair in Milan, Italy (T. I. for Nov., 1959, p. 88). Tooling for production models of this machine is underway, Mr. Hudson said, but it will be almost a year before they are available.



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HOW OTHERS MANAGE

Two mill men add to CSP discussion

(In TI for Sept., 1959, p. 145, CONTRIBUTOR NO. 1172 *asked for information on yarn count-strength-product (CSP) as it is related to weaving. He is interested in establishing minimum standards and thus to lend a measure of predictability to his weaving performance. Following are replies of two mill men.—The Editors.)*

THE EDITORS:

Yes, CSP is important to good weaving, but it is not the whole story. So many more variables enter into the picture that it would be impossible to enumerate all of them.

Any mill operates with better cost and efficiency when the warp yarns are made with optimum twist (for highest break factor). For instance, on any one yarn number, the break factor goes up with each increase in twist, up to a certain point (optimum twist). Beyond that optimum, additional twist causes the break factor to drop. This optimum twist multiple (for greatest break factor) may vary some from coarse yarns to fine yarns; it also is different for another grade of cotton (staple length). We express twist in yarns as "twist multiple," which is:

$$\text{Twist Multiple} = \frac{\text{Turns per inch}}{\sqrt{\text{Yarn count}}}$$

This relation holds true, approximately, for the ordinary range of yarn numbers and should hold true for 25s to 40s. However, the count-strength-product (break factor) system is not perfect; it varies inversely with the yarn count, when the twist multiple is held constant.

If there is a 2000 break factor on 25s yarn at 4.20 twist multiple, for instance, 40s yarn with the same twist multiple may have a 1600 break factor. Therefore, to get a 2000 break factor on 40s yarn, one may have to go from 1 1/16" to 1 3/16" staple with a 3.85 twist multiple.

I doubt that it would be economical to maintain a 2000 break factor on all yarn counts. However, the spinner certainly should always put optimum twist (for maximum strength) into warp yarns. This "optimum twist" is found by carefully controlled spinning tests, and a statistical analysis of the results.

Once the matter of optimum

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► Entries must not have been published previously and must not be submitted to any other publication.

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twist is settled, all yarn counts should be tested several times each week for weight and break factor, and the results plotted on on charts. By doing this, yarn strength and count can be controlled, and any sudden drop investigated and corrected quickly before the weave room production is affected.

The next step is to weave these yarns into the various styles of cloth, making weaving studies to determine the frequency of stops due to warp, filling, and mechanical causes. Recap these studies by each different style, expressing the stops as stops per producing loom-hour.

$$\frac{\text{Stops}}{\text{Looms} \times \text{Hours} \times \text{Efficiency (\%)}} = \text{Stops per producing loom-hour}$$

Select the studies with 25s warp yarn, twill weave, for instance. On some graph paper (10 squares to the inch will do), graduate the abscissa (horizontal line at bottom) in stops per producing loom-hour, starting with the lowest value at the left and going up to the highest value to the right. Graduate the ordinate (vertical line at the left) in ends per inch (sley), starting at lowest at bottom, going up to highest at top.

Now, plot the rate of stops for each sley, and draw a line through the averages. This line will be slanted downward to the right, and will indicate the relation between warp stops and sley for that particular yarn and weave.

It may be necessary to make additional refinements or improvements to this technique. The number of harness frames, fineness of the reed, and so on, are other factors which will affect the rate of stops. These relations also can be found by plotting on graph paper.

From this information, accumulated over a period of time, one can construct tables to indicate the expected warp stops on any style of cloth he might wish to make. When the warp stops deviate widely from the expected, ones tables of experience will support his complaints. It may be possible to work out a relationship directly between break factor of certain yarns and loom stops, although that may require extensive tests and development of new techniques.

CONTRIBUTOR NO. 1210

THE EDITORS:

Undoubtedly the lea [skein] count-strength-product has a great value to the spinner because he can anticipate the commercial value of his product; it is also important to the weaver because from it he can determine the suitability of the particular yarn for a specific quality of fabric and predict approximately the weaving efficiency.

The CSP is a measure of the strength quality of the yarn which is much less dependent upon yarn count than the lea strength and is a convenient means of comparing yarns which differ in count.

It is important to remember that the lea test is about as unscientific a test as could well be devised, but it possesses a positive advantage over the single-thread test in giving what we might call "disproportionate prominence" to the existence of weak places in the yarn —weak places give way first in this test, and not only do they then take no further part in maintaining the strength of the lea, but the yarn for half a yard or more on each side of the broken places fails to maintain the strength of the remainder yarns.

Therefore in a lea breaking strength we actually obtain not the average strength of the yarn under test, but that of the weakest part. The fact that the count measurement is taken from the same sample of yarn, and then related directly with the strength, is of great importance.

Yarn in actual practice is broken by: high tensions, the hummering of the reed, the pluck of the shuttle, badly and inaccurately tuned looms, yarn coming into contact with rough surfaces, badly sized yarn, and the insertion of excessive number of picks in the woven fabric. The yarn before breaking receives either a snapping or a plucking strain.

To the best of my knowledge there has not been a complete study to endeavor to establish standards of minimum CSP, where factors such as fabric construction, speed and type of loom, etc., are taken into consideration. The main reason for this is the difficulty of covering a great number of existing variables.

However, individual mills usually arrange for such studies by working within certain limits of yarn qualities, weaving constructions, and types of machinery. Usually these limits are the bulk of qualities produced.

The contributor has failed to mention whether the yarns used in his experiments (trials) was of carded or combed nature; also what was the quality of the raw cotton in making these yarns. He should bear in mind, and I am sure he knows, that wide differences in the lea count-strength, may result form differences in the quality of the raw cotton used, the method of treatment during spinning, and—as he has mentioned—the degree of twist in the yarn.

To illustrate my point, in Table I are some values obtained from testing three different counts of yarn spun from five different qualities (in staple length) of cotton. [See table on page 127.]

The importance of the staple length of the cotton used to make these yarns is quite apparent. The strength of the yarn is to some extent dependent upon the amount of twist inserted in it.

By noticing the type of break that occurs when testing a yarn, it can easily be observed that with a low twisted yarn the fibers draw apart at the place where the break occurs. With medium twisted yarns the break shows both fiber slippage and rupture, while highly twisted yarns snap with mainly fiber rupture.

The fact that by increasing the number of tpi the spinning production could be reduced is well known to all spinners, but I suggest this question is up to the management to decide whether spinning production will be slightly reduced or weaving efficiency be increased or vice versa.

From my personal experience a reasonable range of CSP values could be as follows:

Carded yarns between 1850 and 2000
Combed yarns between 2300 and 2750

Regarding the amount of twist for double yarns required to give a satisfactory CSP, providing that the other factors mentioned above

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TABLE 1

Lea Strengths of 20s, 40s, and 60s Combed Yarns, Normal Twist

Count (s)	Breaking strength in pounds for the staple length indicated				
	⅞"	1"	1⅛"	1¼"	1⅜"
20	68	85	103	122	140
40	25	35	44	52	62
60	11	17	23	30	36

Lea Strengths of 20s, 40s, and 60s Combed Yarns, Normal Twist

Count (s)	Breaking strength in pounds for the staple length indicated				
	1⅛"	1¼"	1⅜"	1½"	1¾"
20	113	132	151	170	190
40	48	57	68	77	88
60	26	32	39	45	51

TABLE 2

Effect of Twist on Yarn Strength

Twist constant	3.0	4.5	5.0	6.0	6.8	8.6	10.2
Average count	24.4	23.1	22.0	21.2	22.3	20.1	18.0
CSP	**2408**	**2852**	**2892**	**2552**	**2324**	**1849**	**1510**

are also considered, I have found the following procedure to be of general satisfaction:

The original single twist is 1.4 times the final doubling twist, or the doubling twist is 7⁄8ths of the original single twist. In the case of voile yarns, it is common practice to use good quality combed cotton to offset strength lost due to high twist insertion. The twist constant in voile yarns is always between 6 and 9, indicating that we pass the "twist optimum" beyond which any increase in twist results in strength decrease of the yarn.

Table 2 shows a typical example of the effect of the amount of the twist on the count-strength-product of 24s yarn.

This shows that when the twist constant is 5.0 the yarn reaches its "twist optimum" and its CSP is at maximum 2892.

I would suggest to the contributor that he endeavor to establish some sort of standards within the limits of the yarns and cloth qualities that his mill produces, considering as many operating variables as possible. Quotation of standards established in other mills might not be satisfactory for his particular case.

Finally I recommend that he investigate and pay careful attention to the air conditioning state of his weaving shed. Often the amount of humidity and temperature of weaving room are overlooked, and yet they play such an important part in determining the weaving efficiency and CSP maintenance of the yarn.

I hope I have given some points that will assist the contributor to investigate further his problem and realize why we cannot draw a definite and general line in establishing values of minimum CSP for any mill and various qualities of fabric.

CONTRIBUTOR No. 1209

Prevent leather mildew

THE EDITORS:

Leather can be protected against mildew by treating it with a solution of copper sulfate—or bluestone as it is sometimes called. Dissolve a pea-size lump of the chemical in a glass of water and apply the solution to the leather. When dried, it may be stored for long periods without serious mildew damage.

CONTRIBUTOR No. 1219

Disk breaker easy on hands

THE EDITORS:

Breaking pattern disks for patterns on circular knitting machines is usually a very laborious operation. It is generally done with conventional tools consisting of a pattern disk holder, which has numbers inscribed around it to correspond to the various disk lugs, and a lug breaking handle. This conventional handle, which is shown in Figure 1, is merely a rectangular piece of steel which can, and often does, wear blisters or callouses on the pattern man's hand.

Fig. 1

Fig. 2

We have found that by welding a piece of round conduit pipe onto a portion of the lug breaking handle, as shown in Figure 2, that the breaking operation of disks is much easier, faster, and not nearly so hard on the hands.

To make this handle, cut off the conventional handle at line B, Fig. 2. This will lessen the weight of the finished product. Cut a length of lightweight pipe to form a comfortable grip in the pattern man's hand (C, Fig. 2); then crimp one end and slip the pipe over the conventional handle and weld as shown at A, Fig. 2. If desired, a plug may be inserted into the heel of the handle and rounded to complete the new handle.

CONTRIBUTOR No. 1197

Gauge for setting roller stand brasses

THE EDITORS:

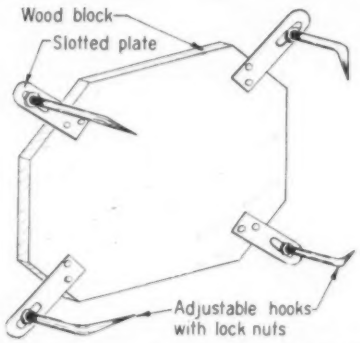
The brass steps in the roller stands of our ring spinning frames

equipped with four-roll drafting systems wore so that the tops of the bottom fluted rollers were out of line. The brass steps demanded correction either by building up with weld metal or by outright replacement.

We improvised a gauge for checking brass thickness. It consists of a wooden block with eight sides, four of which are shorter than the others (see the illustration). At each of these short corners we attached a slotted piece of flat metal into which we fitted a bent hook.

Two roller stands are fitted to the ring frame and four short sections of fluted rolls are placed in them to simulate working conditions. The bent hooks are successively numbered and are used to check the roll height in each of the four steps.

The hooks are threaded to allow us to adjust them, so that when we have finished checking a line of



rolls they are in good horizontal alignment. We replace or build up brasses as needed, and file fit them to give the needed roll height. The gauge works so well that, once the individual stands are fitted with brasses, we have been able to set in the four complete roll lines without making any major corrections.

CONTRIBUTOR NO. 1179

Steel shavings handled in perforated shovel

THE EDITORS:

When we remove steel shavings from our lathe pans at the end of each shift, we use a shovel perforated with ¼" holes drilled in rows. The holes are sufficient in number (we cover the entire shovel with them) to permit the expensive coolant to run back through the holes as the shavings are removed.

CONTRIBUTOR NO. 1061

Some card cylinders warp under metallic clothing

In keeping abreast of the worldwide textile situation, we asked a textile executive in Italy (see "An Italian Views the Textile Picture in His Home Country" in the August, 1959, issue, p. 159, for one of his reports to us) to give us his experiences in the use of metallic clothing on cards. His reply follows.

THE EDITORS:

While I can agree with the economics of metallic clothing, I should like to point out that not every card is fit to receive it. Indeed, the tension is much greater than with conventional clothing, because the number of "fillets" is so great that even with a few pounds for each turn, the total becomes terrific. The cylinder, being only a shell with two lateral reinforcing rings, will lose its circular shape under this pressure if the walls are too thin or the metal is distributed unevenly.

Even if one starts with a perfect cylindrical shape, it will distort under the metallic grip over a period of months or years. The conventional flexible clothing will undergo stretching, which further reduces the lighter stresses its fewer turns exert. About all the mills in Italy tried the metallic clothing at one time or another, but limited the experiment to a few cards for the most part.

I worked in one of the mills that made up the exceptions to the limited trails. There we had 250 cards built with doffers and cylinders of small diameter but with great wall or shell thickness. With a width of 36", the cards operated with 0.003" settings between the front flats and the cylinder and with a 0.005" setting between cylinder and doffer.

Despite this, I never saw a really good web, although the firm had a good reputation as a combed-yarn producer; its reputation for carded yarns was only slightly less. After I left the firm, it developed a new card having a 27" cylinder and a 17" doffer. The licker-in ran at 800 rpm, the "flats" were 17 slowly rotating 2" cylinders set 0.002" to the cylinder. These and the cylinder and the doffer were covered with the same fillet. The "flats" remained clean and produced no strips.

As far as I know the web is rather good. A German and a Spanish firm have negotiated licenses for building the rather inexpensive card, and some hundreds of them are now in operation.

From my experience, and as a sort of summation:

1. Doffer and cylinder must be very strong to stand the bending pressures from so many turns of tightly wound wire. An English card with which I am familiar is the best I have seen for this.

2. The main bearings should be in perfect condition to allow the very close settings needed.

3. The cleaning process should be facilitated through high licker-in speeds and close mote knife settings.

4. The cylinder-to-flats and cylinder-to-doffer settings should be closer than usual.

5. The flats should be clothed with conventional materials and kept well ground. I strongly recommend that they be given an off-the-card grinding every six months, since grinding on the card is likely to get them out of shape.

6. Generally speaking, the metallic clothing requires much greater precision in grinding and

setting than has been necessary.

I am well aware that the metallic clothing is being used quite extensively in France and Germany and with good results. But personally, I would approve its use with caution and then would give the nod to its use in combed yarn mills first.

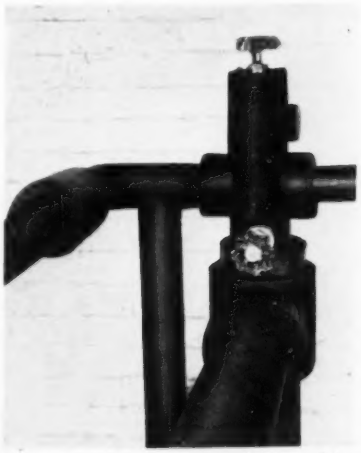
CONTRIBUTOR No. 1202

Remedy for water dripping from pipes in weave room

Dundee Mills, Inc., Griffin, Ga., manufacturer of towels, flannelettes, and diapers, improved production and eliminated a hazard by stopping moisture condensation on overhead water supply lines. The condensation, caused by hot, moist air against cold water lines, dripped and made weave room floors slippery. A flexible, foamed plastic pipe with a built-in vapor barrier stopped it.

The insulation may be used on lines operating up to 200 F, is made with a closed cellular structure that stops air and moisture penetration, and is designed for exceptional ease in handling. It is so flexible it can be tied in knots; so resilient it springs back to its original shape when untied.

Available in both sheet and pipe covering form, it can be slit and snapped over existing lines and then sealed with a waterproof adhesive, or else it can be slid over new lines before they are put in place. Joints are easy to fabricate. The firm's own maintenance crew did an efficient job of installing it, although the men had never installed any insulation.



Fabricating the joints proved no problem to plant maintenance men, although they never before had installed any insulation. Built-in vapor barrier makes it unnecessary to apply an external finish.

Approximately 300 feet of the 3″ water supply lines feeding an air change unit were involved. The original hangers were left in place and insulated with ¾″ x 4″ sheet material (all insulation used was ¾″ thick).

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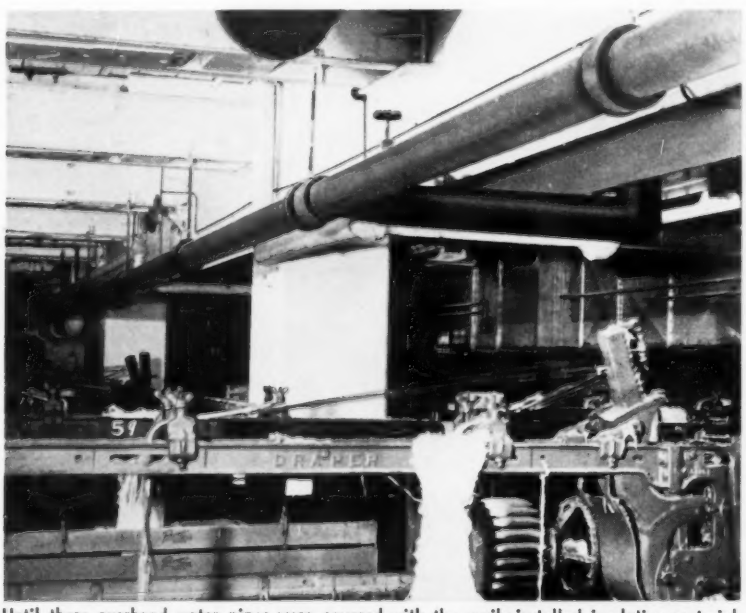


Until these overhead water pipes were covered with the easily-installed insulation material, water condensed on them and dripped onto looms and floor below.

Need Money?

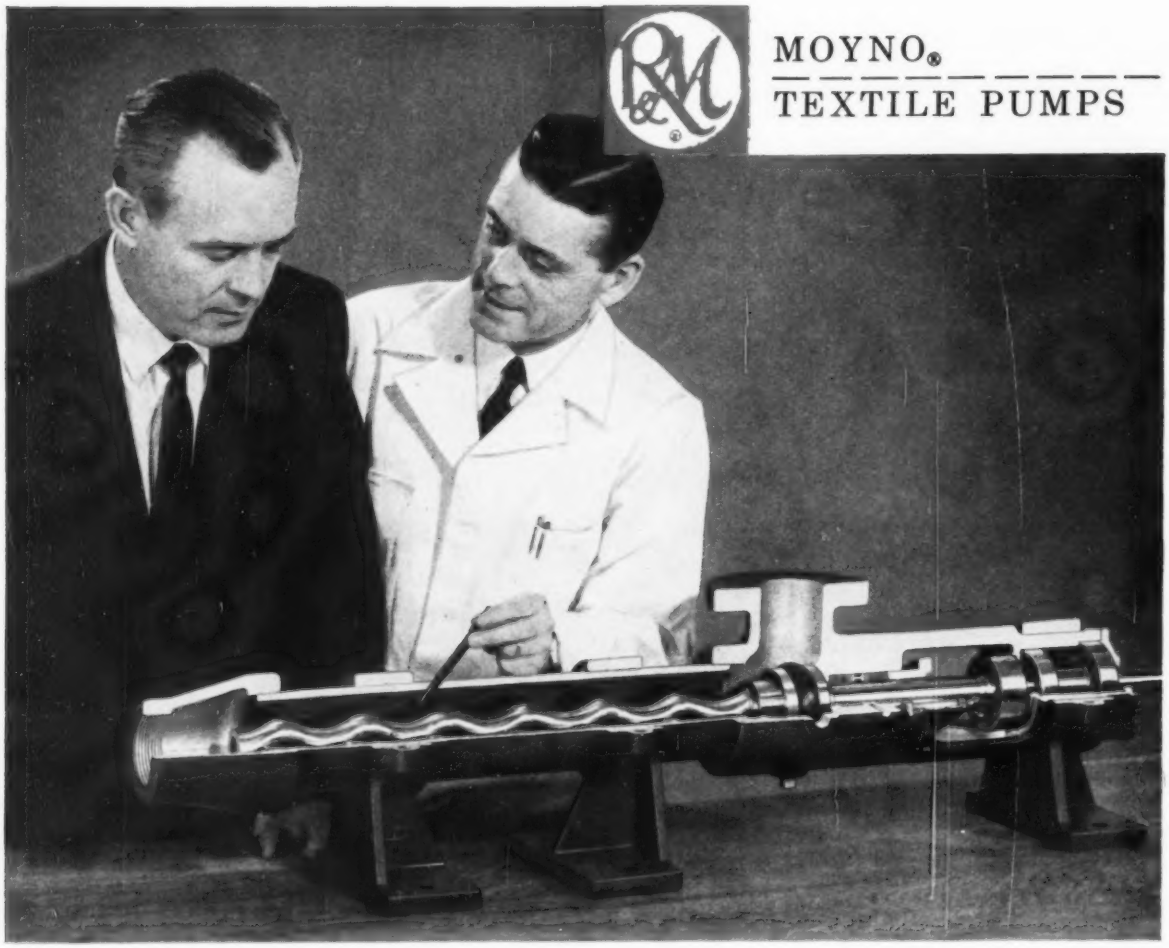
Send TI your kinks, short cuts, etc. (the rules are on p. 123). In addition to being paid for all your acceptable work, you may walk off with one of the three $100 prizes given yearly.

Steel wool holds wood screws

THE EDITORS:

Wood screws will hold against vibration if a sliver of steel wool is wrapped about them before they are inserted. The sliver is formed to correspond roughly to the length of the screw and to about half its diameter. Then the screw point is inserted through the center of the sliver and the ends wrapped about the threads. This trick keeps our knitting machines from working loose from the floor.

CONTRIBUTOR No. 1121



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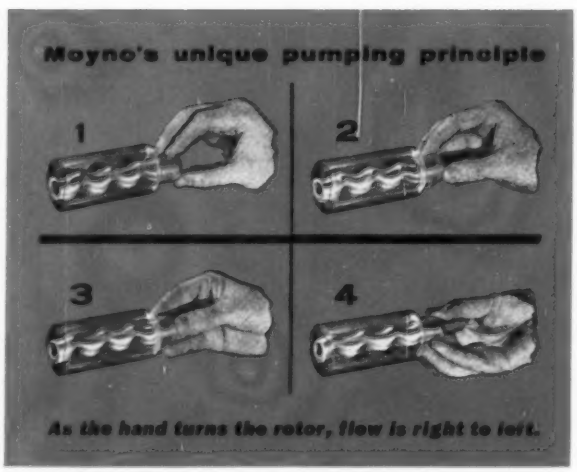

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Tying-in speeds ranging from 60 to 650 knots per minute, flexibility that permits use on practically every known warp material, and reduction in warp preparation time which results in substantial savings and less loom downtime are outstanding advantages of the new Ustermatic portable warp tying machine.

Of modern, enclosed (with dustproof housing) design, the machine handles the full yarn range in flat sheet, lease, or in combination. It automatically stops in the case of double ends or flats in the lease. For a change-over, a knob is simply turned for each set of ends. The operator can also select, without tools, the regular dog knot or the secured knot for slippery type yarns such as nylon, Orlon, etc.

Another feature is the automatic repeating device which can be easily pre-set for from 1 to 22 repetitions. After a pre-set number of attempts to separate an abnormally thick place or crossed end, the machine will stop automatically if proper selection is not made. However, after each repetition the machine speed will be reduced in order to provide better conditions for separation, and original speed will be resumed when proper separation is made.

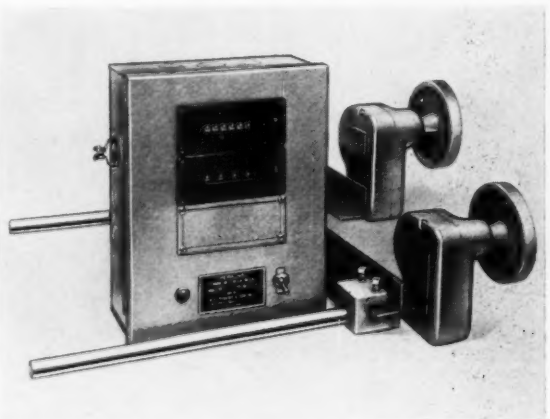
The simple construction of the scissors offers two shearing blades with four cutting surfaces which can be set in four different positions without tools. This arrangement allows from ten to thirty millions cuts without sharpening.

Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

Do you want more data? Write ☁ or use card on page 151; list A-101

Operation of the Ustermatic warp tying machine is explained during a recent demonstration in a Charlotte, N. C. Hotel.

Accurately determines stretch and shrinkage



A new Shrink and Stretch Meter which is accurate within 1/5 of 1% is available for use on slashers, Compressive shrinking machines, and dyeing, bleaching, and finishing ranges.

By reading the two figures on the meter it is possible, without slowing down or stopping production, to determine the amount of loss or gain which takes place in material and to make corrections accordingly.

B. F. Perkins & Son, Inc., Holyoke, Mass.

Do you want more data? Write ☁ or use card on page 151; list A-102

Quality control program for wash-and-wear fabrics

A quality control program now available by license to manufacturers of wash-and-wear fabrics is designed to perform in the field of wash-and-wear the same service which "Sanforized" now performs in the field of shrinkage. Key features of the program are: (1) a precise performance standard for wash-wear fabric; (2) an electronic test instrument which measures fabric smoothness by means of an "electric eye" (details on page 82 of this issue); (3) quality control at the finishing plant level through continuous testing and check-testing.

Fabrics which have been tested under the program and

YARMOR PINE OIL—LEADING WETTING AGENT FOR TEXTILES

The value of pine oil in wet-processing as a penetrant and wetting agent is long established. However, perhaps you're not acquainted with the particular advantages of Yarmor 302W, a Hercules pine oil made specifically for the textile industry. Yarmor reagent is not just "pine oil"; it is specially processed to produce an extra high-grade product with the greatest wetting, penetrating and emulsifying ability. That's why so many people in the textile industry never just say "pine oil." They say Yarmor®.

Pine Chemicals Division
Naval Stores Department

HERCULES POWDER COMPANY
INCORPORATED

900 Market Street, Wilmington 99, Delaware

NYS9-1

meet the specified performance standard are identified by the trademark "Sanforized-Plus."

To qualify for the trademark, a fabric is first submitted to the licensor's laboratories for preliminary evaluation. Once approved, the fabric is tested during production at specified intervals in accordance with the required test procedure which includes tests for (1) smoothness after washing as measured by the electronic instrument previously mentioned, (2) crease resistance, (3) shrinkage, (4) tensile strength, and (5) tear strength. Detailed records of test results are maintained at the finishing plant. Representatives of the licensor's field staff regularly review test results and make duplicate tests of their own.

Cluett, Peabody & Co., Inc., Sanforized Div., 530 Fifth Ave., New York, N. Y.

Do you want more data? Write ◂ or use card on page 151; list A-103

Convert A1-32 knitter for brushed-sheared goods

With a conversion kit now available Wildman Jacquard Model AI-32 circular knitting machines can be equipped to produce Orlon and Banlon fabrics suitable for brushing and shearing.

Separation courses which permit the brushing and shearing are produced in the fabric by rearranging the standard turning cam blocks and installing two new turning cam blocks. Complete installation data and parts are contained in the "AI-32 Brush and Shear Kit."

Wildman Jacquard Co., 1210 Stanbridge St., Norristown, Pa.

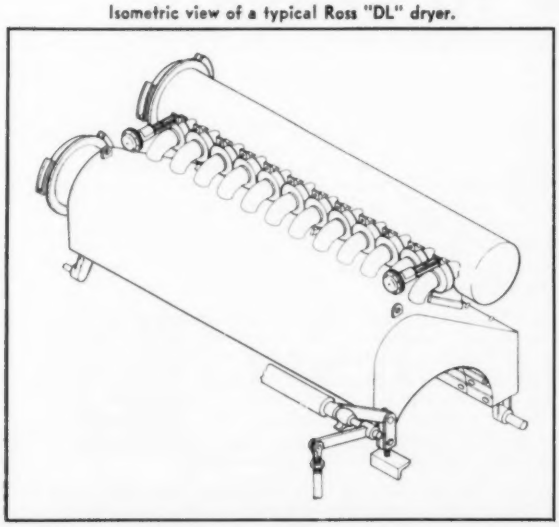
Do you want more data? Write ◂ or use card on page 151; list A-104

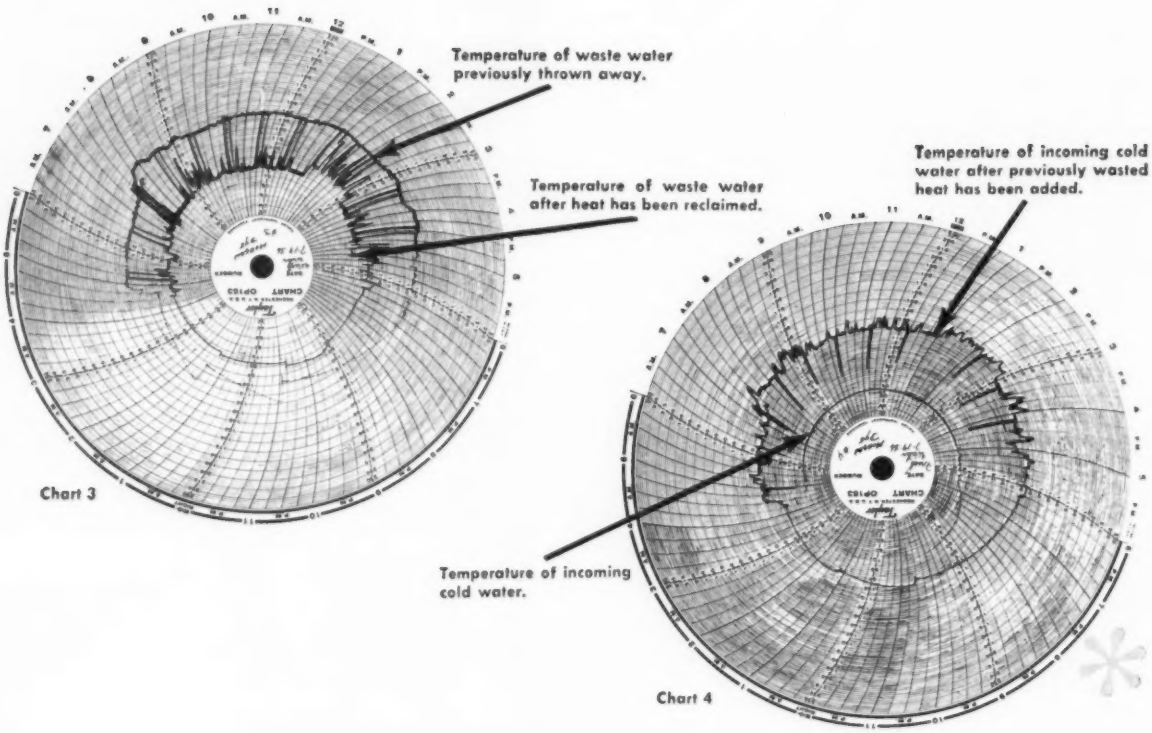
How to speed up cylinder drying of textiles

In textile drying applications where the material is supported on a cylindrical drying surface such as that of a dry can or slasher cylinder, production can be increased with the new Ross "DL" dryer, a high-velocity hot-air drying unit, the heating surface of which is curved to conform to the surface of the cylinder.

The distance between the head (or heads if there is

Isometric view of a typical Ross "DL" dryer.




Temperature of waste water previously thrown away.
Temperature of waste water after heat has been reclaimed.
Temperature of incoming cold water after previously wasted heat has been added.
Temperature of incoming cold water.
Chart 3
Chart 4

How a **BREADY SYSTEM** of heat recovery solved the boiler overload problem of Morgan Dyeing and Bleaching Company and gave them **STEAM TO SPARE**

Reported boiler peak loads of 50,000 lbs. are down to 26,000 lbs., fuel consumption has been sharply reduced, dye kettle fill time of 25 to 35 minutes is now 5 to 6 minutes, production time has been substantially reduced, with a reserve supply of hot water.

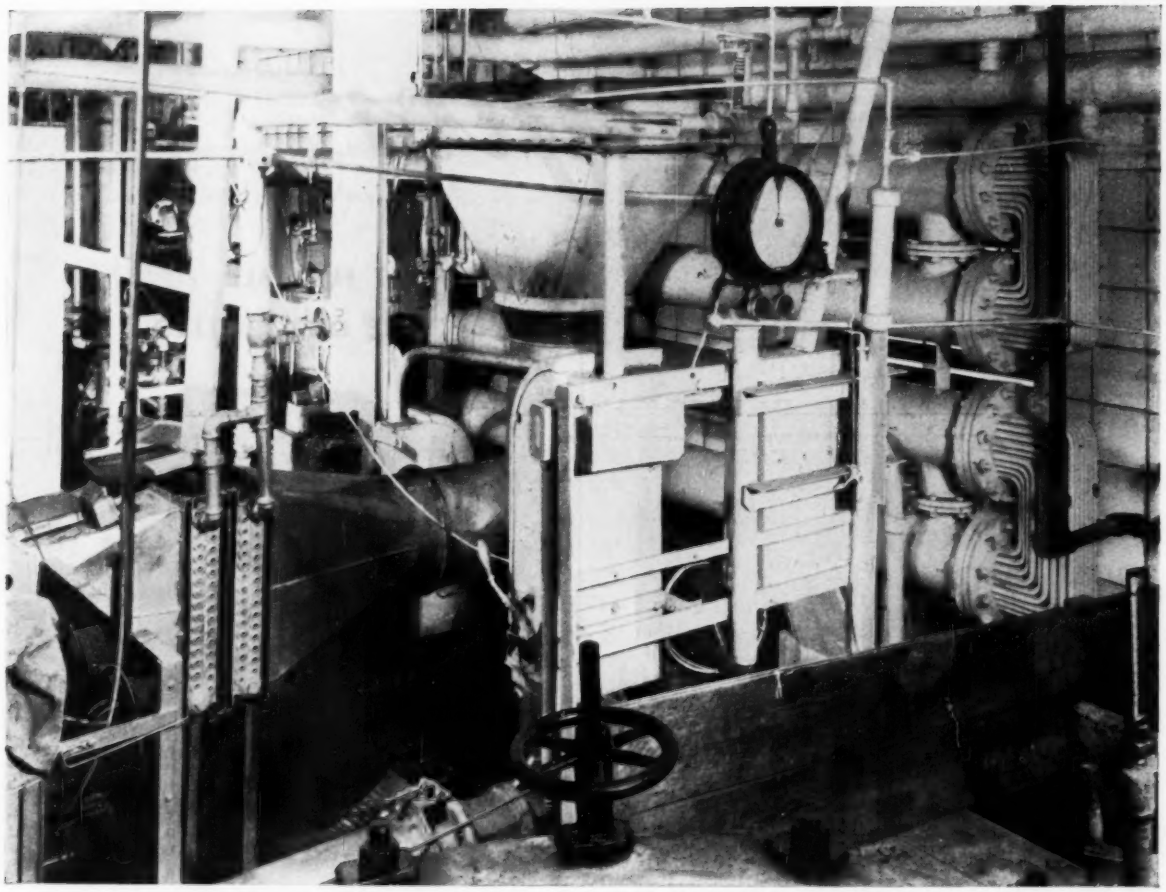
Boiler peak loads of the Morgan Dyeing and Bleaching Company, Rochelle, Illinois, last winter, were seriously in excess of boiler capacity. Purchase of hot water that a neighboring mill could furnish without seriously affecting their own production, only partially helped to relieve this situation. There was need for action, and Francis J. Connolly, purchasing agent, contacted Ludell to see what could be done.

Ludell engineers studied the problem. They surveyed the company's entire hot water heating system and determined the Bready System of Heat Recovery that would meet the plant's requirements.

The actual *Temperature Charts* from the Bready System of Heat Recovery, at Morgan, (see top of page) show the incoming 55°F water heated to an average temperature of 120°F, the desired hot water starting temperature, utilizing the waste heat from process effluent having an average temperature of 130-135°F. The momentary dips in the No. 4 chart show the system *automatically* cleaning itself. The only steam required for process water is that which is used for boil-off operation.

Today, Morgan Dyeing and Bleaching Company at Rochelle, Illinois, has all the steam needed for its present production. It now has boiler capacity to sell steam to the neighboring mill. Based on boiler load figures, a reduction of fuel costs of 41% is indicated. Equally important is the fact that the Bready System of Heat Recovery made the purchase of an additional boiler, fuel required for the boiler and building to house it, unnecessary.

Formerly, Morgan Dyeing and Bleaching Company took 25 to 35 minutes to fill and heat water in dye kettles before



The Bready System of Heat Recovery of the Morgan Dyeing and Bleaching Company was installed next to a wall of the plant and occupies only a few square feet of previously unused floor area. The continuous U-shaped tube bundles connecting the reclaimer shells, which identify the Bready System and are a means of achieving its guaranteed non-clogging feature, are at the right. Because other plant equipment has since been installed, the control panel and self-cleaning segments of the system are obscured from view.

actual processing operation could start. With the Bready System, the dye kettles are filled in about 5 minutes with water at desired temperature so that process can begin immediately. With a 20 minute reduction per fill multiplied by the number of fills and vats, a tremendous overall decrease in actual operating time was realized. The system will pay off in 25 months.

The boiler overload problem of Morgan Dyeing and Bleaching Company is not without its counterpart in many other wet processing plants. Boiler peak load reductions, production increases, fuel reductions and other economies can be effected in these plants with a Bready System of Heat Recovery as they were accomplished at Morgan.

Bready Systems of Heat Recovery are as important as an integral part of new plant hot water heating systems as they are in solving existing plant hot water heating problems. It will pay you to investigate all the benefits of a Bready System of Heat Recovery as it specifically applies to your present plant, or any new plant installation. Write, wire or phone Ludell today for detailed information, or a free plant survey.

Ludell *Manufacturing Company*

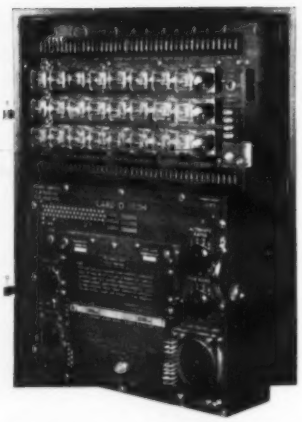
5200 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

MANUFACTURERS OF BREADY SYSTEMS OF HEAT RECOVERY, BREADY SYSTEMS OF HOT WATER HEATING AND WHEELER SELF-UNLOADING WASHER

NEW AND BETTER DYE CONTROL

BY *Taylor*

THE MOST ADVANCED BATCH PROCESS SEQUENCE CONTROLLER



CARD-O-TRON* PUNCH-CARD TIMER

For any batch process where control of sequence and duration of operations is required, the CARD-O-TRON Timer is the last word in automatic control. Just punch the card for any cycle—and that cycle can be repeated *exactly* at any time in the future by simply reinserting the card in the Timer.

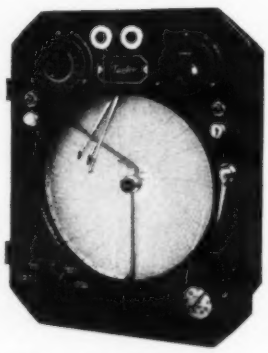
With this remarkable new instrument you—

- eliminate the hazards of human error—because every phase of the process is completely automatic
- save repeated, and costly, trial and error settings
- insure absolute uniformity of product
- save operator time

The CARD-O-TRON Timer is ideal for applications like Dolly Washers and Dye Cycles and other sequenced operations.

A product of our subsidiary, Taylor-Emmett Controls Inc., the CARD-O-TRON Timer is sold and serviced by Taylor Instrument Companies.

THE MOST FLEXIBLE DYE CYCLE CONTROLLER



TAYLOR FULFLEX* CONTROLLER

Designed in cooperation with Boss Dyers, the new FULFLEX Controller gives you 30% more flexibility than any other controller on the market today . . . And just as much or as little automatic control as you require.

New FULFLEX Controller features include—

- Adjustable starting temperature
- Adjustable initial hold time
- Adjustable rate of rise
- Adjustable hold temperature
- Adjustable hold control times
- Adjustable add periods
- Adjustable forced cooling
- Adjustable end temperature

Write for **Bulletin 98339.**

*Trade-Mark

Ask your Taylor Field Engineer about these new controllers, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ont.

Taylor Instruments **MEAN ACCURACY FIRST**

more than one cylinder involved) and the cylinder surface is adjustable so that the velocity of the air striking the goods may be varied to change the drying rate. Also, the entire head can be adjusted for volume and temperature control.

The dryer can be raised automatically to clear the drying cylinder for threading of the web and is versatile enough to level the sheet in case of non-uniform moisture content.

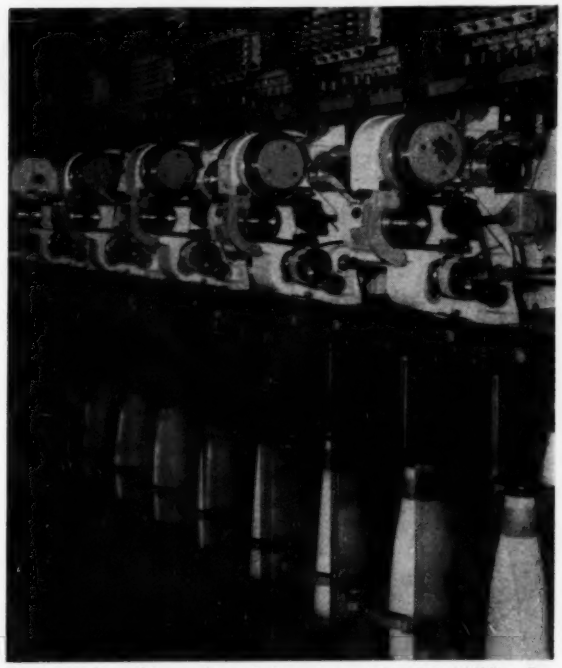
J. O. Ross Engineering, Div. Midland-Ross Corp., 730 Third Ave., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 151; list A-105

Two units for making Agilon yarn

Now available to mills licensed by Deering Milliken Research Corp. to produce Agilon yarn are two new models of equipment for this purpose: (1) Edge Crimp Unit No. 2110 which can be fitted to existing man-made fiber down-twisters or supplied on a complete machine; and (2) Edge Crimp Unit No. 2086 which is available only on a complete machine.

Edge Crimp Unit No. 2110 is a high speed unit with built-in post treatment process, capable of producing up to six ends of soft, bulked yarn, relaxed and ready for use on knitting machines or looms. Among construction features of the unit are: (a) yarn heating wheels are designed so that constant surface temperature is maintained when they are running or standing; (b) adjustable edge-crimping holder; (c) stainless steel cold setting roll; (d) controlled yarn speed through precision-made wrap wheels; (e) once surface speeds are set, no further ad-



Close-up of machine making Agilon yarn at Deering Milliken Research Corp., Spartanburg, S. C. No. 2110 edge crimp units are utilized.

For IMPROVED and SPEEDED processing ... with REDUCED WASTE

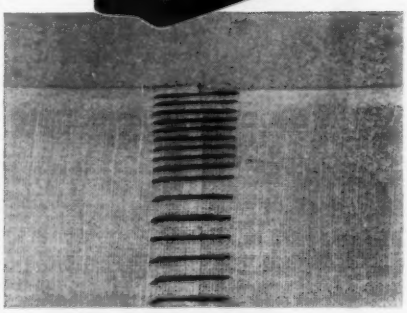
MERROW NOW OFFERS ... *IN A SINGLE MACHINE*

- ***WIDER STITCHING***

plus

- ***MULTIPLE STITCHING AT SELVAGES***

Style 60 Y3B Butted Seamer



Some processors require a wide butted seam to eliminate "combing out" of coarse material under tension. Others, handling high count materials, need multiple stitching at the selvages for extra strength. Merrow now makes available a machine that fills **both** requirements.

The strong one thread seam (approximately ⅝" wide) is quickly and accurately formed by the high speed machine ... can be easily removed after processing. Result: improved processing ... higher production ... reduced waste.

Request complete information on this or other machines in the Merrow **complete line** of butted seamers.

TRADE MARK REG

The MERROW MACHINE COMPANY

2805 LAUREL ST. • HARTFORD, CONN. • U.S.A.

let's talk about...

LAUREL FULLING ASSISTANTS

This month we'd like to tell you about our new Laurel synthetic compounds prepared particularly for fulling woolen fabrics and wool-synthetic blends. These Laurel Fulling Assistants provide results over a wide range of fabrics used for men's and women's wear. They assure good cover and an excellent hand.

Results obtained on goods of a broad range of weights and constructions, are equivalent to those obtained with low titre soap, and desired shrinkage in both head and width is obtained well within normal fulling time.

Laurel Fulling Assistants are clear, amber colored liquids which dissolve readily in water. They are free rinsing. Solutions prepared with Laurel Fulling Assistants and soda ash or other alkalies are stable, do not separate, and require no cooking. These properties can effect savings for you in handling and in steam. And, further savings can be effected since Laurel Fulling Assistants are stable in the presence of high soda ash and alkali concentrations. This will enable the preparation of strongly alkaline fulling solutions which will permit the fulling of cloth carbonized in the grease without first neutralizing the goods in a soda bath. Thus, an entire processing step can be eliminated.

We would like to tell you more about these Laurel **quality** products. Won't you let us hear from you **today**?

Laurel Brand OVER 50 YEARS OF SERVICE TO INDUSTRY

Laurel

SOAP MANUFACTURING CO., INC.

TIOGA, THOMPSON & ALMOND STS. • PHILA. 34, PA.

Warehouses: Paterson, N.J. Chattanooga, Tenn. Charlotte, N.C. Greenville, S.C.

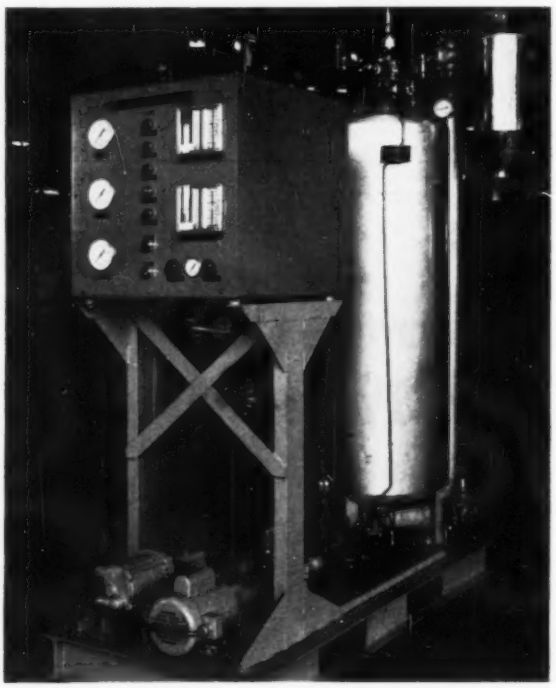
justment is required; (f) solenoid-operated emergency stop.

Edge Crimp Unit No. 2086 is a high speed mechanism with the following features: (a) self-contained and easily adjustable edge crimp unit; (b) precision-made heating rolls, temperature of which is controlled through a common heat source, maintain evenness of temperature along complete length of frame; (c) built-in yarn lubricating units; (d) single position sensitive knock-off device; (e) controlled yarn input speed overfeed and output guarantee regularity of crimp and bulk; (f) feed-through unit positively driven to avoid yarn slippage—no lubrication required; (g) simple pull-start drive mechanism incorporating built-in release action; (h) yarn take-up direct to a cone form package.

Hobourn Aero Components Ltd., Strood, Rochester, Kent, England.

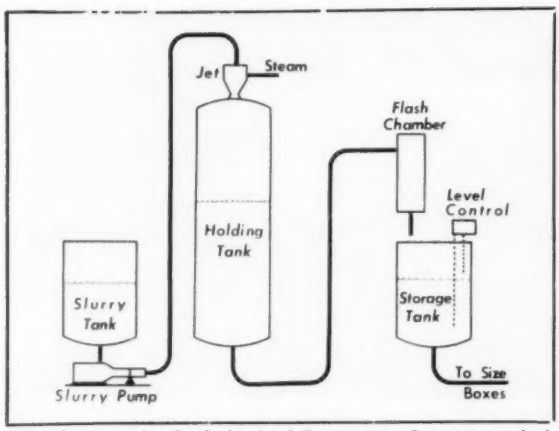
Do you want more data? Write ◂ or use card on page 151; list A-106

Size maker cuts seconds, ups weaving efficiency



Continuous preparation of noncongealing warp size from unmodified corn starch is provided by the new Staley High-Temperature Converter. It produces a wholly uniform starch paste of the desired viscosity, modified to any applicable degree of conversion, and having excellent film-forming properties.

By converting low-cost, unmodified corn starch with the machine textile manufacturers can greatly improve slashing and weaving performance. At the slasher, start-ups are quicker, size application is more uniform, size-box temperatures are less critical, and hard size in size boxes and on yarns is greatly reduced. In the weave room, loom stops are greatly reduced, and hard-size streaks and soft spots in warps are eliminated. Substantial savings are possible not only in cost of starch product but also through reductions in cloth seconds and increas-



Size preparation by the Staley High-Temperature Converter method.

es in weaving efficiency averageing 1-½ to 2-½ per cent.

Starch slurry of uniform concentration is fed at a constant rate to the jet cooker where it is met by a high-pressure jet of steam which rapidly heats it to a high temperature. The hot starch enters directly into a holding tank and is converted as it passes through the tank at a uniform flow rate. The converted starch is discharged into a storage tank equipped with level controls for automatically controlling operation of the converter.

A. E. Staley Mfg. Co., 22nd & Eldorado, Decatur, Ill.

Do you want more data? Write ◆ or use card on page 151; list A-107

New fibers and yarns

A textured nylon yarn for carpets, called "Cumuloft," has a modified cross-section with a built-in crimp with rounded corners. Carpets made from the yarn offer maximum wear with minimum care, excellent color range and clarity, have superior loft, and are non-shedding, easy to clean, and non-pilling.

The Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

Do you want more data? Write supplier or use card on page 151; list A-201

A rubber-like monofilament yarn for foundation garments, swimwear, surgical stockings, etc., is available in limited quantities. Designated "Lycra" spandex yarn, this elastomeric yarn is stronger and more durable than conventional elastic thread, weighs a third less, gives longer wear, and has from two to three times as much restraining power. As a result, it provides softer, lighter, and sheerer girdles with the kind of figure control that was heretofore confined to heavier, bulkier garments. It also makes possible girdles and brassieres that, with proper temperature controls, can be both machine-washed and machine-dried. Surgical stockings that resemble service-weight nylons can be made from the new yarn. In swimsuits, the yarn's affinity for dyes eliminates the problem of exposed non-dyeable elastic yarn when fabric is stretched. Since the yarn is white, it may be used uncovered. Also, it may be piece-dyed.

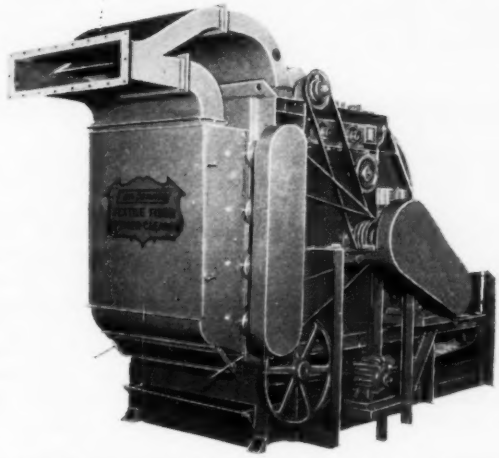
E. I. du Pont de Nemours & Co., Inc., Textile Fibers Dept., Wilmington, Del.

Do you want more data? Write supplier or use card on page 151; list A-202

Polypropylene staple, tow, and filament yarns, trade named Prolene, are light in weight, possess high strength and outstanding resistance to abrasion, and are

Here's What You've Been Looking For . . .

A MONEY MACHINE!*



*CEN-TENNIAL'S OPENER CLEANER

Cen-Tennial's Opener Cleaner removes troublesome leaf, bract, boll particles and other trash through precise separation of the fibers. There is neither damage to the stock nor loss of good cotton, since there is no beating.

When there is no loss of good cotton, money is made . . . that's why the Cen-Tennial Opener-Cleaner is a MONEY-MAKING MACHINE!

Spinning and weaving efficiencies are increased by the improved blending. It is possible to run lower grades and still maintain strength and quality. Overall waste is greatly reduced, resulting in tremendous savings.

Performance data and mill testimonials furnished on request.

OPENS — CLEANS — BLENDS

CEN-TENNIAL HAS BEEN MILL-CONDITIONING COTTON FOR MORE THAN 75 YEARS

"FROM FIELD TO FABRIC"

CEN-TENNIAL

COTTON GIN COMPANY

COLUMBUS, GEORGIA

unaffected by water and common chemicals. Prolene staple and tow are made in 2 to 15 denier per filament sizes and continuous filament yarns in 210 denier and up.

Industrial Rayon Corp., Union Commerce Bldg., Cleveland, Ohio.

Do you want more data? Write supplier or use card on page 151; list A-203

Bamboo-like metallic yarn is now available. Known as Woodtone Mylar, it simulates bamboo strips used in woodweaves of all types; consequently, one use of the strong blond-wood-colored yarn is in fabrics that simulate woodweaves. It is also used in textured drapery fabrics, sheer curtains, shoe cloths, millinery, and braids.

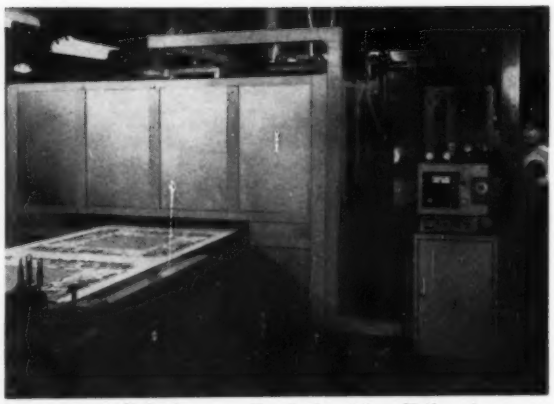
Metlon Corp., 432 Fourth Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 151; list A-204

Screen-printed fabrics dried-cured at 1000 yd/hr

A new gas-fired drying and curing machine for use in continuous automatic screen-printing ranges is more flexible and provides more accurate control of temperature. Production of 1000 yards per hour of drapery and table cloth fabrics up to 80 inches wide is being obtained from a screen-printing range in which one of these machines is utilized. Heavy or light fabrics may be processed on it.

A patented pneumatic advance is a feature of the machine. As the printing machine stops and starts, advancing the cloth at a rate of 44 inches per second, the Adams/Zeller machine assures proper drying and curing with an intricate, automatic valving system, dual pressure controller, and an electronic timer.



Entering end (left foreground) of the Adams/Zeller dryer-curer for screen printed fabrics. Behind the automatic control panel which is visible at the right dried fabric is delivered (path of delivered goods is perpendicular to that of fabric entering oven).

In the drying zone, with a holding capacity of 10 yards, controlled high velocity air impinges on the fabric. Lower velocity, evenly distributed air passes over the cloth in the curing zone, which has a holding capacity of 44 yards.

The gas-burning heating system develops up to one million Btu, providing for temperatures up to 500 F. All rolls are Teflon-coated to minimize heat transfer to the fabric in the stop position during the printing cycle.

Adams/Zeller Corp., Glenside, Pa.

Do you want more data? Write ◀ or use card on page 151; list A-108

LONGER, HEAVIER LAPS WITH THE

LONG PNEUMATIC LAP CONTROL SYSTEM*

These systems may be applied to any existing picker. Positive, controlled air pressure on pin ends deliver uniform pressure on laps forming on calender stack rolls —from start-up to doffing. Equally effective with both cotton and synthetics. Radical fluctuations common to old deadweight systems are eliminated. May be applied to calender rolls, fluted rolls or both. Waste at ends virtually non-existant. Maintenence costs drastically reduced—up to 32 moving parts eliminated.

PROVEN ON THE JOB!

More than 350 installations have proven the efficiency of the LONG Lap Control System by consistently producing longer, heavier, higher quality laps. Many mills are producing laps up to 75#, with smaller diameters, and are handling such laps manually. Other mills with conveying equipment are making 88# laps.

*Patented U. S. Pat. Off.; Foreign patents applied for.

SEND TODAY FOR COMPLETE DETAILS AND BROCHURE

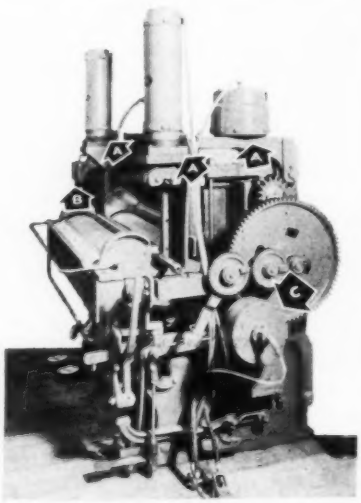


Photo above shows (A) Long Lap Control System installed on picker. (B) L&H Pneumatic Lap Pin Pusher. (C) Auto-Pneumatic Picker clutch.

LIVINGSTON & HAVEN, Inc.

P. O. BOX 808-T
CHARLESTON, SOUTH CAROLINA

Representatives in all major textile areas.
Address foreign inquiries to
PLATT BROS. (SALES), LTD.,
Oldham, England

New finishes and chemicals

A synthetic resin latex, Pliolite Latex 140, is designed for use in upholstery and carpet backings, sizings, adhesives, and printing inks. As a non-curing backsizing, the latex exhibits outstanding heat and light aging properties. Containing a non-staining anti-oxidant system, this product is a water dispersion of a styrene-butadiene copolymer. At room temperature it forms tough, flexible films with low odor, excellent clarity and adhesion, high pigment binding and mechanical stability.

For those who prefer to add their own particular anti-oxidant a sister product, Pliolite Latex 141, is available.

The Goodyear Tire & Rubber Co., Chemical Division, Akron, Ohio.

Do you want more data? Write supplier or use card on page 151; list A-205

A new wash-and-wear resin, Seyco-Set 65, is characterized by lack of color development and excellent chlorine resistance when properly cured. This new type of cyclized modified urea will give a very high crease angle recovery without excessive loss of tear strength, tensile, or abrasion resistance. The product is compatible with a wide variety of other materials which may be used for changing the finish or producing a stiff or soft hand.

Seydel-Woolley & Co., 748 Rice St., N. W., Atlanta 8, Ga.

Do you want more data? Write supplier or use card on page 151; list A-206

A wool fulling assistant, Seyco 6727-L, provides fast, even fulling, prevents entanglement of goods, and prevents burns and scuff marks. The product is for use with soda ash solutions and may be blended with solvent type soaps or solvent blends for removal of tar and other soils. It aids in subsequent scouring of wool oils, etc., and rinses free in the following scouring operation.

Seydel-Woolley & Co., 748 Rice St., N. W., Atlanta, Ga.

Do you want more data? Write supplier or use card on page 151; list A-207

Easier mill preparation of detergents, wetting agents, and other surfactants from an alkyl aryl base is the result when Seyco Sulfonic Acid Special is used. Easier to handle in the plant and easier to neutralize, the product produces the same very effective surface active agents with good wetting, foaming, and detergent properties.

Seydel-Woolley & Co., 748 Rice St., N. W., Atlanta, Ga.

Do you want more data? Write supplier or use card on page 151; list A-208

Good stability of fabrics to heat and scorch tests is provided by Seyco-Lube 45, a basic polyethylene emulsion which is an excellent softener and finish for knit goods, for sewability finishes, and for top finishes in resin application where white goods or high quality materials are handled that require very good stability.

Seydel-Woolley & Co., 748 Rice St., N. W., Atlanta, Ga.

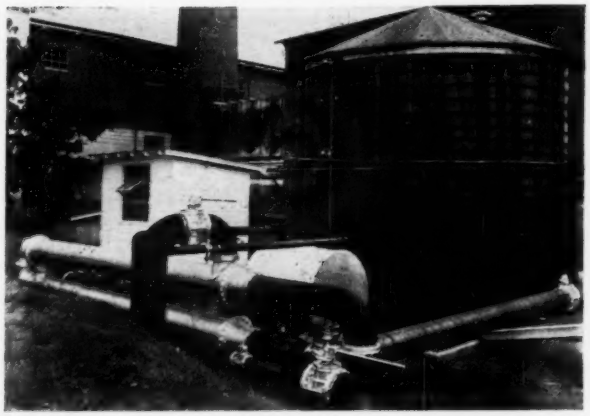
Do you want more data? Write supplier or use card on page 151; list A-209

A triazone type reactive resin designed for crease resistance, wash-and-wear, and dimensional stability is called Seyco-Set TZ. The product has built-in resistance to chlorine damage, being effective after many washings. It is a non-yellowing resin that is compatible with a variety of softeners or other resins and bodying agents which may be required to produce the desired hand in the fabrics.

Seydel-Woolley & Co., 748 Rice St., N. W., Atlanta, Ga.

Do you want more data? Write supplier or use card on page 151; list A-210

More finishes and fabrics may be made water repellent and soil resistant with an improved version of Impreg-



THIS HEAT RECLAIMER CAN SAVE TEXTILE MILLS 30 MILLION DOLLARS!!

The APCO Heat Reclaimer, pictured above, can save textile mills $30,000,000 each year. If you do wet processing, part of this saving can be effected in your plant.

CAN INCREASE BOILER CAPACITY AS MUCH AS 30%!

By reclaiming the heat from the hot water effluent, the APCO Heat Reclaimer can in effect increase the capacity of a boiler plant by 30%. This means lower peak loads and additional hot water supply with no outlay for additional boilers.

IN MANY CASES USES 30% LESS FUEL!

THE APCO Heat Reclaimer with its non-clog, high-velocity design can save as much as 30% on your fuel bill. So . . . take 30% of the amount spent on fuel last year, and you will have a rough idea of how much money an APCO Reclaimer may save you each year.

AMORTIZES IN ONE TO TWO YEARS!

Depending on the amount of hot effluent you are presently wasting, the APCO Reclaimer will probably amortize itself in one to two years. From then on, the profit's all yours!

Ask your plant engineer about the value of heat in your waste water, and write for a list of successful installations today!

USE THE POSTAGE-PAID RETURN CARD IN THIS ISSUE TO GET MORE INFORMATION

AGENTS IN MAJOR TEXTILE MANUFACTURING CENTERS

APPLIED ENGINEERING COMPANY
INCORPORATED

ORANGEBURG, S. C.

Elliptical Travelers
REALLY PERFORM
ON
TIME-PROVEN
"Anti-Wedge"* RINGS

Fast break-in

Much larger bearing area with controlled micro-inch super finish

Top-speed smoothness

*Trademark Registered

Write for "ANTI-WEDGE CIRCULAR"

WHITINSVILLE (MASS.)
SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.
Rep. for Ala., Ga. & Tenn.: H. L. WILLIAMS, Box 222, West Point, Ga.

SPRAY NOZZLES

greater choice of patterns

Full Cone
Hollow Cone
Square Spray
Flat Spray

greater choice of capacities

greater choice of materials and spray nozzle types

WhirlJet hollow cone spray
FullJet full cone spray
Pneumatic Atomizing Nozzle
FlatJet flat spray

Over 12,000 Standard Spray Nozzles for more exact performance to fit your needs

For complete information write for Catalog No. 24

SPRAYING SYSTEMS CO.
3272 Randolph Street • Bellwood, Illinois

nole. The new product is compatible with many more combinations of finishing chemicals. It is more durable also on a broader range of fabric constructions.

Warwick Chemical Division, Sun Chemical Corp., 750 Third Ave., New York, N. Y.

Do you want more data? Write supplier or use card on page 151; list A-211

Particularly recommended for bleaching because it accelerates without causing predecomposition of the bleaching agents, such as peroxide, is the auxiliary, Levapon THD. Also useful for boiling out and scouring of textiles, the product has outstanding rewettability and very good dispersing properties. It is not sensitive to hard water, and it promotes penetration in bleaching, dyeing, and washing operations.

Verona Dyestuffs, P. O. Box 385, Union, N. J.

Do you want more data? Write supplier or use card on page 151; list A-212

Improved hand in fabrics of natural and synthetic fibers is provided by a recently announced group of softeners which are economical to use. Known as "Creamoyls," the products are durable finishes that impart loft, fullness of hand, a high degree of controlled softening without ragginess, a fine surface lubricity, and excellent antistatic properties. They are available as modified cationic, anionic, nonionic, and amphoteric systems. Applicable with conventional equipment, the products do not require high temperature curing or drying.

Scholler Brothers, Inc., Collins & Westmoreland Street, Philadelphia 34, Pa.

Do you want more data? Write supplier or use card on page 151; list A-213

A substantive cationic softener. Catacrest 100, disperses readily in cold water, giving low-foaming solutions. Because it is 100% active, it is unnecessary to stock large amounts, and there is no need to prepare stock solutions. An amber-colored liquid, the product may be used with acids and alkalis.

Crest Chemical Corp., 225-235 Emmet St., Newark, N. J.

Do you want more data? Write supplier or use card on page 151; list A-214

An aid for naphthol dyeings. Naphthol Assistant SS, serves as a stabilizer for diazo baths and an emulsifier for loose pigment particles in such dyeings. Added to the coupling bath, the product minimizes crocking. It aids in removal of free color lakes on the fiber.

Koppers Co., Inc., Chemicals & Dyestuffs Div., Koppers Bldg., Pittsburgh 19, Pa.

Do you want more data? Write supplier or use card on page 151; list A-215

Bleaching agent and auxiliary. A recently announced bleaching agent, Sodium Chlorite "Hoechst," does not corrode steel and is not subject to combustion. Bleaching Auxiliary HV inhibits chlorine dioxide generative in the bleach bath.

Carbic-Hoechst Corp., 451 Washington St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 151; list A-216

Three wet processing aids. Migration of dyes is prevented by a recently announced product called Emigen P. The textile auxiliary, Hostapal AS, improves crocking of naphthol dyeings. A new anticrease and flameproofing agent, known as Imine IP and APO, does not absorb chlorine.

Carbic-Hoechst Corp., 451 Washington St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 151; list A-217

Equipment briefs

A new hand oil can that is especially useful for hard-to-reach places is equipped with a powerful positive-acting pump that provides close control when oiling machinery. It delivers either a full stream or one drop, depending on pressure applied to the finger lever. Designed to provide long service, the oil can features a comfortable grip and is available with either rigid-angle or steel flexible spout.

Eagle Mfg. Co., 1185 Charles St., Wellsburg, W. Va.

Do you want more data? Write supplier or use card on page 151; list A-218

Wheel dresser for Roy bare cylinder grinders. Now available for B. S. Roy cotton and woolen card bare cylinder grinders and portable roll grinders is the new Diamond Emery Wheel Dresser. Use of the device insures accurate grinding to produce the proper finish for the wheel, better balance by maintaining concentricity, and utilization of all the grinding surface of the wheel.

B. S. Roy & Son Co., 801 Southbridge St., Worcester 3, Mass.

Do you want more data? Write supplier or use card on page 151; list A-219

Caster offers improved operation, less maintenance. A new Doffing caster for use on textile mill equipment has a Nicro steel wheel with a flat face and fully rounded edges for floor protection. Ball bearings provide maximum rollability. Other features: a zinc-plated thread guard completely recessed, lubrication fitting recessed to prevent snagging of threads and damage to fitting, ample clearance between leg of caster and thread guard to facilitate thread removal.

The Rapids-Standard Co., Inc., 342 Rapistan Bldg., Grand Rapids 2, Mich.

Do you want more data? Write supplier or use card on page 151; list A-220

"Chainless" conveyor trolley for light or heavy duty. Now available is a standard trolley housing for all capacities that enables the user to convert an existing American "Chainless" conveyor from 100- to 400-lb capacity by merely changing the wheels. The eight-wheeled units are connected by steel rods terminating in ball and socket joints. Line pull is directed through the centerline of the trolley.

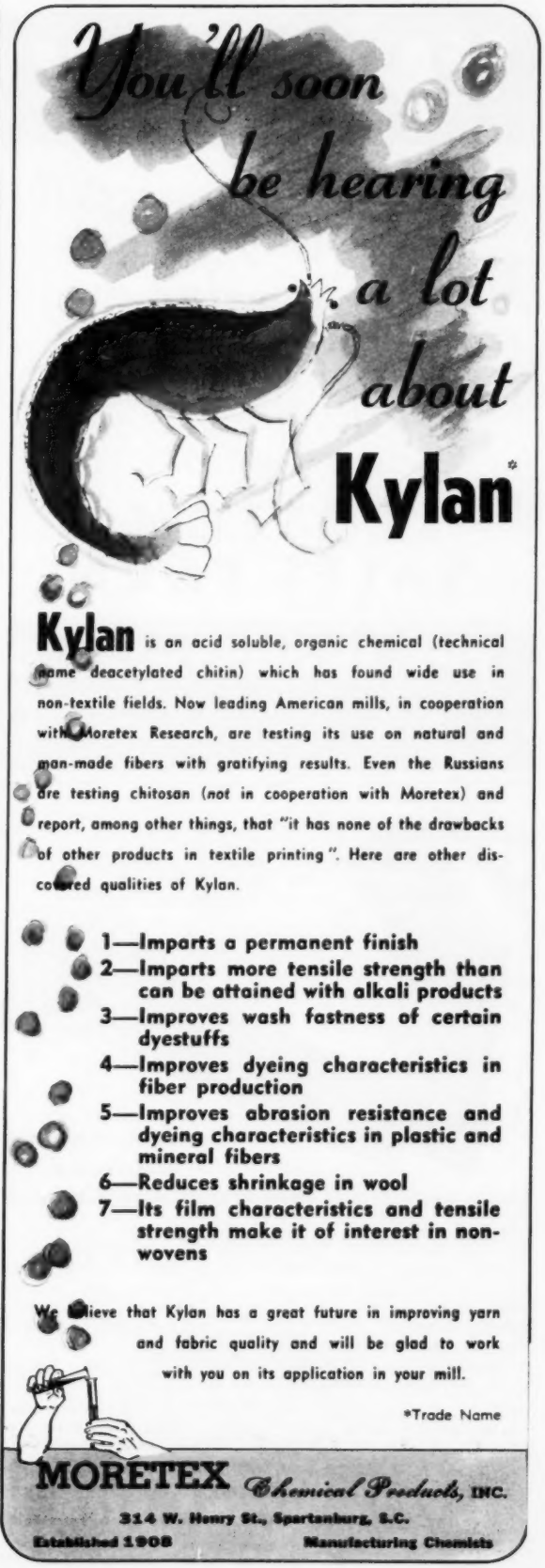
The Conveyor Div., The American MonoRail Co., 4th & Franklin Sts., Tipp City, Ohio.

Do you want more data? Write supplier or use card on page 151; list A-221

Hand reamer for 3½" to 4" pipe and conduit. The Ridgid No. 354 spiral reamer smooths the inside edges of 3½" to 4" pipe and conduit, eliminating the need for hand filing. Ratchet handle speeds work in tight quarters. Light weight reamer is removable for sharpening.

Ridge Tool Co., Elyria, Ohio.

Do you want more data? Write supplier or use card on page 151; list A-222

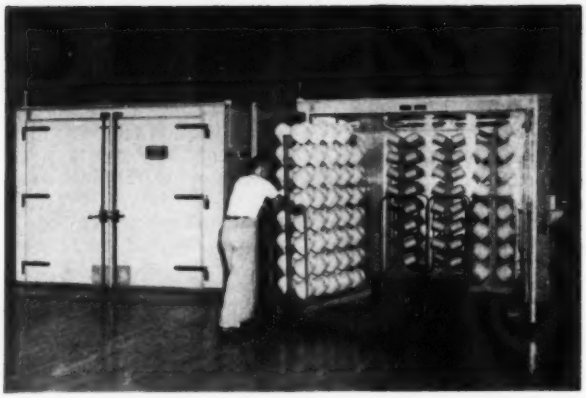

You'll soon be hearing a lot about
Kylan*
Kylan is an acid soluble, organic chemical (technical name deacetylated chitin) which has found wide use in non-textile fields. Now leading American mills, in cooperation with Moretex Research, are testing its use on natural and man-made fibers with gratifying results. Even the Russians are testing chitosan (not in cooperation with Moretex) and report, among other things, that "it has none of the drawbacks of other products in textile printing". Here are other discovered qualities of Kylan.
1—Imparts a permanent finish
2—Imparts more tensile strength than can be attained with alkali products
3—Improves wash fastness of certain dyestuffs
4—Improves dyeing characteristics in fiber production
5—Improves abrasion resistance and dyeing characteristics in plastic and mineral fibers
6—Reduces shrinkage in wool
7—Its film characteristics and tensile strength make it of interest in non-wovens
We believe that Kylan has a great future in improving yarn and fabric quality and will be glad to work with you on its application in your mill.
*Trade Name
MORETEX Chemical Products, INC.
314 W. Henry St., Spartanburg, S.C.
Established 1908
Manufacturing Chemists

"H-W"® conditioner

The best way to assure plus value and quality

in

COTTON SALES YARN



Cotton Sales Yarn being conditioned at one of the better southern mills.

THE INDUSTRIAL DRYER CORPORATION

STAMFORD, CONNECTICUT

SALES REPRESENTATIVES IN KEY TEXTILE AREAS

CORROSION-FREE J-BOXES

INSURE CONTAMINATION-FREE GOODS

Every day, more textile men are discovering the many advantages of du Verre construction. J-Boxes, made from self-supporting resin bonded fiberglass, are **completely** corrosion-resistant—inside and out.

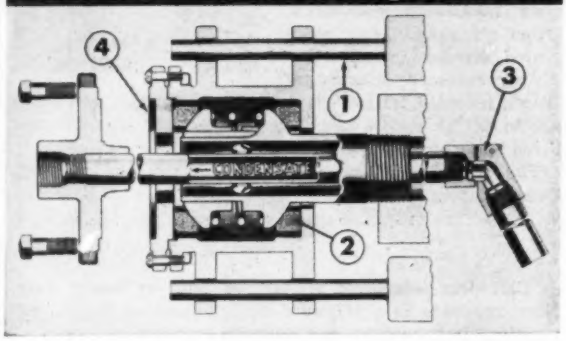
Corrosion-free **inside** means the textile finisher enjoys continuous production of contamination-free, trouble-free goods. Corrosion-free **outside** means du Verre J-Boxes never need painting. They're virtually maintenance-free.

du Verre construction is rugged and durable. Lightweight, it permits quick, easy, low-cost installation.

du Verre offers many other products for the textile industry, including tanks, hoods, vats, fans. For complete facts on du Verre corrosion-free J-Boxes and other products designed to your specifications — write Today for Bulletin No. 100.

du Verre, Incorporated
Box 37-H • Arcade, N. Y.

For service on Dry Cans and 30" Slasher Cylinders



Type LJSP with Syphon Elbow

1. Support rods carry all the real weight. Sealing assembly "floats" freely inside. **2.** Seals without packing—needs no lubrication or adjusting. **3.** Syphon elbow replaces clumsy curved syphon pipe with two straight pipes, passes right through joint. **4.** Assembly plate holds parts in place when head is removed.

Johnson ROTARY PRESSURE Joints
First in the Textile Industry

Write for Catalog J-2002

Shows Johnson Joints for all needs, on dry cans, print cans, calenders, compressive shrinkage ranges, 5' and 7' cotton slashers, etc.

THE JOHNSON CORPORATION
815 Wood St., Three Rivers, Mich.

A pneumatic timer with a completely closed air system is extremely well suited for applications in dusty or dirty atmospheres. Since no external air is used, foreign matter cannot get into the system to interfere with timing accuracy. Available for a-c and d-c operation, the timing range is adjustable from 0.2 second to 1 minute.

Square D Co., 4041 N. Richards St., Milwaukee 12, Wis.

Do you want more data? Write supplier or use card on page 151; list A-223

A packaged gas-fired storage water heater recently placed on the market provides easy, low-cost installation and scale-free heating at top efficiency. Called the "Scalefree" water heater, it is a completely self-contained unit, including electronic controls for safe, quiet, and automatic operation. 29 different sizes are available, ranging in capacity from 250 to 4,000 gallons. Recovery range varies from 375 to 2125 gallons per hour.

The Patterson-Kelley Co., Inc., East Stroudsburg, Pa.

Do you want more data? Write supplier or use card on page 151; list A-224

For measurement of chlorine-in-air in concentrations ranging from ½ to 20 parts per million a field detector kit is available. Instrument employs an aspirator bulb for drawing samples across a "break-tip" detector tube containing an impregnated silica gel. Amount of chlorine in air is indicated by proportional length of blue stain created by reaction of chlorine with silica gel. Instrument also permits sampling from remote locations.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.

Do you want more data? Write supplier or use card on page 151; list A-225

Quick location of accidental grounds on power systems is possible with the Brunt Faultfinder, a combination ground detector and fault locator. Weighing only 18 pounds, the unit includes double earphones which provide a louder, clearer signal. Use of the device does not damage equipment on the line and eliminates the necessity for shutting down power.

Parr Mfg. Corp., 44 Austin St., Newark, N. J.

Do you want more data? Write supplier or use card on page 151; list A-226

A new overseamer features a stitch shortening mechanism which is designed to produce self-tacking at the beginning and end of the seam. Designated the Style 39500 D, the machine is recommended for seaming sleeves of T-shirts and polo shirts, finishing hand towels, closing women's panties, etc.

Union Special Machine Co., 400 N. Franklin St., Chicago 10, Ill.

Do you want more data? Write supplier or use card on page 151; list A-227

Fast and easy threading of bolts ranging in size from ¼" to 1" is accomplished with the Ridgid No. 101 Bolt Threader which features a quick-opening lever that retracts dies for rapid removal of threader from bolt without stopping power drive. Just one die head for all sizes. Loosening of locking lever gives quick, foolproof setting of easy-to-read size bar for standard, oversized, or undersized thread.

The Ridge Tool Co., Elyria, Ohio.

Do you want more data? Write supplier or use card on page 151; list A-228

New
Liquid Cleaner
OAKITE 202

Cleans everything . . . economically

A new, "use it everywhere" liquid detergent—Oakite 202—now offers the greatest convenience ever in cleaning. It goes into water solution quickly without waste . . . without fire hazard. You spray, mop or brush it on.

Oakite 202 forms a rich, sudsy solution that's packed with cleaning power. It cuts through grease-soaked lint, scuff marks, oil. Use it throughout your mill. It cleans up grimy concrete, makes wood floors spotless. It brightens painted walls and woodwork; gives lint-laden, oily machinery a new look. It dries down without streaking.

But—best of all—Oakite 202 in mild solutions out-performs strong solutions of other cleaners. This makes it a most economical all-purpose material.

Ask your Oakite man for a convincing on-the-spot demonstration. Or send for free bulletin to Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

OAKITE

50 1909-1959 SCIENCE

years' leadership in industrial cleaning

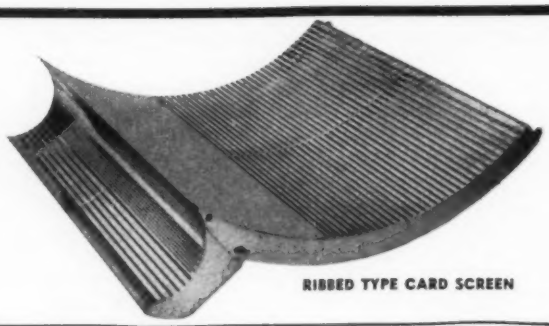
JENKINS PRODUCTS —

ENGINEERED FOR PROGRESSIVE MILLS

Today, more and more, Textile leaders are demanding JENKINS ENGINEERED PRODUCTS, machined on exclusive Jenkins equipment to give smoother performance and more uniform yarn quality.

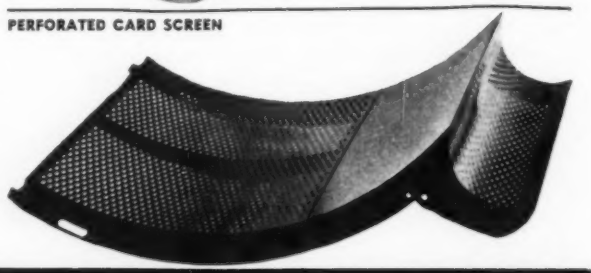
For instance, JENKINS Spinning Cylinders and Card Screens are engineered by men who for the past 45 years have pioneered in *engineered metal products* . . . for mills that have moved constantly forward with higher quality at lower cost.

Ask to see the newest brochure on our complete line of Services in the Metal Fabricating Field.



RIBBED TYPE CARD SCREEN

PERFORATED CARD SCREEN



SINCE 1912 JENKINS METAL SHOPS INCORPORATED ENGINEERED PRODUCTS

JENKINS METAL SHOPS, Inc.

P. O. BOX 1160

GASTONIA, NORTH CAROLINA

AT YOUR SERVICE!

And we don't mean just *lip service*, either!

Your Southern Sizing Representative has a genuine interest in keeping your mill running well. He should . . . whether he eats or not depends on it!

Service Sells Size and Southern Sizing Salesmen Sell Service . . . AND good old Southern Size.

★

SOUTHERN SIZING COMPANY

EASTPOINT, GA.

WHITINSVILLE, MASS.

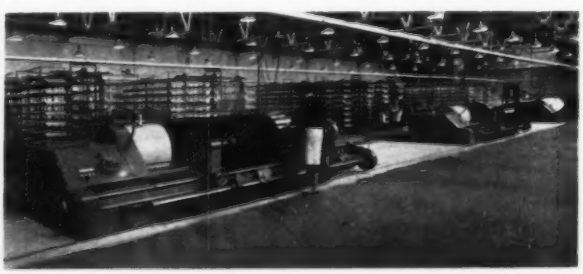
H.J. THEILER CORPORATION

SPARTANBURG, S. C.

BENNINGER WARPER

The most modern warper built today — greatest flexibility — high speeds — Automatic Computor — Transportable Drum — Slash Directly From Drum — or Beam onto Loom Beam — 1:1 End Leases and Split Leases up to 10-Fold — Results: No Yarn waste, better quality warps, no slasher standstill.

QUICK RETURN OF THE INVESTMENT!



Tough, transparent polyethylene film for packaging hosiery and other textiles permits close inspection of goods without opening the package and is warm and pleasant to the touch. Produced by the chill roll or "cast" method of extrusion from Eastman Tenite polyethylene, this plastic film is highly resistant to puncture and tear, so it can easily support the weight of the goods when hung on a rack from a hole at the top.

Typical of packages which may be made with the polyethylene film is this one used by Comal Hosiery Mills, Inc., for ladies' hose.

Texas Plastics, Inc., Elsa, Texas.

Do you want more data? Write supplier or use card on page 151; list A-229

A polyethylene perforator is now available as optional equipment on Battle Creek polyethylene wrapping machines. Perforation of the film facilitates the opening of the packages produced.

Battle Creek Packaging Machines, Inc., Battle Creek, Mich.

Do you want more data? Write supplier or use card on page 151; list A-230

Large-size, all-resin reinforced fiber-glass centrifugal fans insure complete corrosion protection both inside and outside the unit. Wheels are dynamically balanced to provide vibrationless operation. All internal surfaces are smooth so that material does not collect on them and cause unbalance and vibration problems.

du Verre Inc., P. O. Box 37, Arcade, N. Y.

Do you want more data? Write supplier or use card on page 151; list A-231

Contents of bins, tanks, etc., are accurately weighed by the new Weber Air-Mount Weighing System which is operated by a small load-cell placed under each leg. Linear pneumatic pressure is automatically controlled in each load-cell and produces a pneumatic signal on a meter, which may be remotely located.

Weber Air-Weigh Co., 13845 Elmira, Detroit 27, Mich.

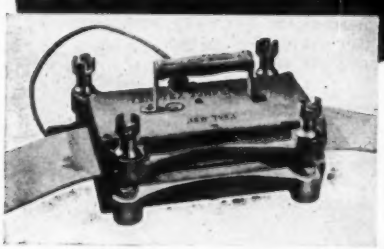
Do you want more data? Write supplier or use card on page 151; list A-232

A new side-stream boiler water control system automatically keeps boiler water crystal clear by eliminating sludge and suspended solids. Saves up to 20 per cent on fuel consumption, 75 per cent on treatment chemicals, 75 per cent on blowdown heat and water losses, and up to 100 per cent on contaminated condensate losses.

Sparkler-Filtrion Corp., North Chicago, Ill.

Do you want more data? Write supplier or use card on page 151; list A-233

TON-TEX
VULCANIZING SYSTEM



Time Tested for 20 Years.

The only complete system for making belts endless on your machines, including Ton-Tex tools, cements, instructions, and the #1000 Ton-Tex Vulcanizer.

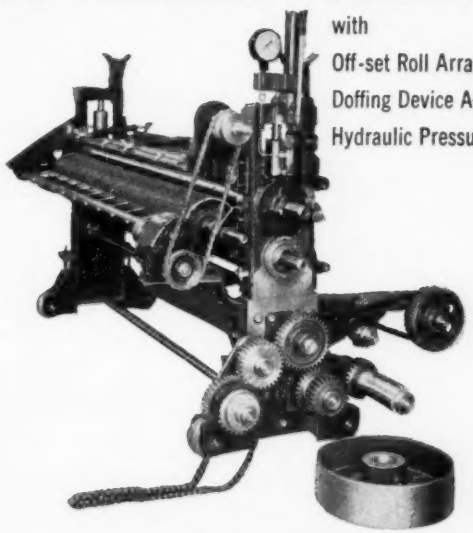
This practical low priced 2 plate #1000 was developed and patented by Ton-Tex to meet the demand for a lightweight portable unit. Weighs only 37 lbs., and operates from any lamp socket outlet. Includes automatic thermostat control, pilot light, and heat indicator.

Write for complete literature.

TON TEX Reg U S Pat Off

TON-TEX CORPORATION
31 Columbus Ave., Englewood, New Jersey
GREENSBORO, N. C. 1910 E. Wendover Ave.
BOSTON, MASS. 51 Sleeper St.
Serving Industry Over a Quarter Century

NEW "LIGHTWEIGHT" PERALTA® MACHINE



with
Off-set Roll Arrangement
Doffing Device Attachment
Hydraulic Pressure

Write for information.

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P.O. Box 25

New dyes

For more information on one or more of these recently developed dyes, either write directly to the supplier whose name appears in Col. 5, or list the key number in Col. 6 on one of the handy return cards on page 151 and TEXTILE INDUSTRIES *will request the data for you.*

1 Class	2 Name	3 For use on	4 Remarks	5 Supplier	6 Key No.
Azoic	National Scarlet YC Base	Cotton and rayon	Produces range of exceptionally bright, red shades when diazotized and coupled with most National naphthols except Naphthol AS-G Disp., which yields a bright greenish-yellow. Very good light and wash fastness properties. Recommended for goods that are to be resin finished for crease resistance.	National Aniline	A-301
Basic	Carbacryl Red BBL Pink BL Blue RL Blue FGL Olive Green BL Black C	Acrylics	They produce subdued shades of superior fastness to light than regular basic types.	Carbic-Hoechst	A-302
Disperse	Interchem Acetate Blue LTD	Acetate	Has excellent pile-on characteristics at temperatures as low as 140 F. Exhaustion and leveling properties also excellent. Applicable in jigs and becks, dye is useful and economical as a self-shade and for producing compound shades, such as dark greens, navies, and blacks.	Interchemical Corp.	A-303
Direct	Aminil Fast Brown LGL Fast Black GGL	Cellulosics	Produce dyeings of excellent light, crocking, and water fastness. Withstand resin-fixative treatment with minimum loss of light fastness. Recommended for drapery fabrics and auto and furniture upholstery.	Koppers	A-304
Direct	National Erie Fast Scarlet 4BSH	Cotton and rayon	Produces bright red shades possessing moderate fastness to light and very good to excellent fastness to most wet fastness tests. Has exceptional solubility in cold, hard water.	National Aniline	A-305
Fast Color Base	Basol Fast Red KB Fast Red PDC	Cellulosics	These solutions of the corresponding fast color bases are soluble directly in water containing mineral acid, so they simplify work of dyers. Yarn dyed with them is soft and lofty. Dyeings possess excellent fastness to crocking.	Koppers	A-306
Fast Color Base	Fast Scarlet GC Base	Cellulosics	A readily soluble form of the hydrochloride. Use of hot water for dissolving is unnecessary, and less acid is required in diazotization.	Koppers	A-307
Fast Color Salt	Fast Blue Salt OT	Cellulosics	Economical navy blue shades dyed continuously on Naphthol AS, AS-D, AS-RL, and AS-VL preparations for work clothes and dischargeable grounds.	Carbic-Hoechst	A-308
Fast Color Salt	Fast Grey Salt B Fast Grey Salt G	Cellulosics	A wide variety of shades can be obtained continuously on Naphthol prepares. Excellent fastness properties especially on Naphthol AS-D, AS-ITR, and AS-BG.	Carbic-Hoechst	A-309
Fast Color Salt	Fast Olive Salt BR	Cellulosics	Yields brown and olive shades with Naphthol AS.	Carbic-Hoechst	A-310

Look what happened to
THE CORN WE TOOK OFF THE COB
Beauty is what happened.
Beauty and color and enduring charm . . . captured in textiles.
We stand ready to supply your company with materials of highest quality—from the corn we took off the cob.
AB
STARCHES • DEXTRINES • GUMS
For warp sizing, finishing, printing and dyeing.
ANHEUSER-BUSCH, INC.
Bulk Corn Products Division
St. Louis, Missouri

New dyes (Continued from page 148)

1 Class	2 Name	3 For use on	4 Remarks	5 Supplier	6 Key No.
Fiber Reactive	Remazol Yellow G Yellow GN Golden Yellow Y Yellow RT Brilliant Orange RR Red B Red 3B Red Violet R Brilliant Violet 5R Brilliant Blue R Black B Black G	Cellulosics, wool, nylon, silk, and some acrylics	Form with cellulose an irreversible ether linkage through a reactive vinyl sulfon group. Excellent fastness properties. Many are fast to chlorine. All are dischargeable. They can be printed, dyed continuously, as well as on package machines, on skeins, or on the jig.	Carbic-Hoechst	A-311
Fiber Reactive	Rhodazol Turquoise GBD Turquoise P	Cellulosics, wool, nylon, silk, and some acrylics	Vinyl sulfon dyes like the Remazols. They can be used together.	Carbic-Hoechst	A-312
Naphthol	Naphthol AS-KG	Cellulosics	For the production of dischargeable mustard, tan and olive shades of excellent all-round fastness properties.	Carbic-Hoechst	A-313
Naphthol	Naphthol AS-SWLL	Cellulosics	A naphthol in powder form which can be dissolved in the machine without any other additions than the caustic soda used for dyeing.	Carbic-Hoechst	A-314
Naphthol	Amanil Naphthol AS-SW 50%	Cellulosics	A useful and convenient form of Naphthol AS-SW, being dispersible in water, and dissolved by mixing with hot water and caustic soda and bringing to the boil. Yarn may be dyed directly without prescouring with increased depth of shade, and with excellent penetration.	Koppers	A-315
Neutral Metalized	Remalan Fast Yellow EG Yellow ERR Orange ER Bordeau EB Violet ER Blue ERR Grey ER Brown EGR Brown EBR Brown EGG	Wool, nylon, silk	A new group of neutral dyeing 1:2 metal complex types. They differ from other types inasmuch as they contain a vinyl sulfon group with fiber reactivity for wool, silk and nylon. They can also be dyed at pH 4 with Carbo Fast Salt IW. Fastness properties are very good.	Carbic-Hoechst	A-316
Neutral Metalized	Irgalan Blue FGL (Pat.)	Wool, nylon silk	It is noticeably greener and considerably brighter than Irgalan Blue GL, and it has slightly higher light fastness. Good fastness to fulling, mill washing, and carbonizing. Excellent neutral drawing properties. Minimum shade change from acid chlorination shrinkproofing treatments.	Geigy	A-317
Optical Bleaching Agent	Carbowhite FCA	Acrylic, polyester, and acetate fibers		Carbic-Hoechst	A-318
Vat	Solanthrene Printing Black TL Optima Paste	Cellulosics	For normal printing of cotton and other vegetable fibers; particularly suitable for contour blacks; excellent fastness to washing, chlorine, and light.	Francolor	A-325

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FREE BOOKLETS

1-1 "LYCRA" SPANDEX FIBER. Booklet describes chemical and physical properties of "lycra," as well as production calculations and processing characteristics. Textile Fibers Division, E. I. du Pont De Nemours & Co., Inc., Wilmington 98, Delaware.

1-2 WATER SOFTENING MANUAL. Booklet describes the process of Sodium Zeolite water softening. Cochrane Corp., 17th Street Below Allegheny, Philadelphia 32, Pa.

1-3 FULLING AND SCOURING WOOL. Technical bulletin describes the use of Sterox 21-K for fulling and scouring wool and wool blend fabrics. Inorganic Chemicals Division, Monsanto Chemical Co., 800 North Lindbergh Blvd., St. Louis 66, Mo.

1-4 CHEMICAL CLEANING. Bulletin describes products for chemical cleaning in various specific applications. Charles Pfizer & Co., Inc., 630 Flushing Avenue, Brooklyn 6, New York.

1-5 ENGINEERED AIR SYSTEMS. Brochure describes hoods, economizers, and dryers for industrial applications. Industrial Air Co., 190 Oak Street, Newton Upper Falls 64, Mass.

1-6 PILLOW BLOCKS. Catalog describes malleable tapered roller pillow blocks and describes advantages fully. Browning Mfg. Co., Maysville, Ky.

1-7 EFFICIENT TEXTILE CLEANING. Booklet describes the use of industrial cleaning compounds and equipment for more efficient cleaning in the textile industry. Oakite Products Co., 19 Rector St., New York 6, New York.

1-8 TEXTILE CHEMICALS. Booklet describes more than 100 chemicals for the textile industry. Union Carbide Chemicals Co., 30 East 42nd St., New York 17, New York.

1-9 CUT OVERHEAD UNDERFOOT. Booklet tells how to clean and maintain various types of floors, with tips on planning and safety. Advance Floor Machine Co., Spring Park, Minnesota.

1-10 GAULIN GTA PLAN. Brochure describes technical assistance covering particle control, analysis of fluids, use of homogenizers, precision pumps, etc., Manton-Gaulin Mfg. Co., Everett 49, Mass.

1-11 SETTING SYNTHETICS. Bulletin describes fiber setter for setting synthetic fibers in baskets, in cans or in bobbin racks. Turbo Machine Co., Lansdale, Pa.

1-12 THE WHITIN STORY. Brochure describes 130 years of successful industrial and civic endeavors. Whitin Machine Works, Whitinsville, Mass.

1-13 HIGH TEMPERATURE CONVERTER. Technical bulletin B-30 describes a new concept in warp sizing featuring the use of a high temperature converter. A. E. Staley Mfg. Co., Decatur, Ill.

1-14 SPINNING CHANGEOVERS. Booklets describe spinning and drafting changeovers for Casablancas, Roth, Shaw, and two type spinning. Dixon Corp., P. O. Drawer 7, Bristol, R. I.

1-15 SKEWED WEFT SOLUTION. Brochure describes a simple, practical, automatic skewed weft straightner that ends uncertain methods. Mount Hope Machine Co., 15 Fifth Street, Taunton, Mass.

1-16 WASTE TREATMENT INSTRUMENTS. Booklet describes instrumentation for treatment of industrial waste and will be helpful to any one with a waste treatment problem. Bulletin B 97—2. Minneapolis-Honeywell Regulator Co., Industrial Division, Wayne and Windrim Avenues, Philadelphia 44, Pa.

1-17 HYDROGEN PEROXIDE. Booklet presents practical information on the properties of hydrogen peroxide, its water solutions, and handling. Solvay Process Division. Allied Chemical Corp., 61 Broadway, New York 6, New York.

1-18 FIBER IDENTIFICATION ACT. Ideas and tips on how to conveniently comply with the textile fibers products identification act. Textile & Apparel Division, Markem Machine Co, Keene, N. H.

1-19 TRAMRAIL ELECTRIFICATION. Bulletin describes Safpowrbar conductor systems for providing electrification of maximum safety and long life. Cleveland Tramrail Division, The Cleveland Crane & Engineering Co., 149 W. 87th St., Chicago 21, Ill.

1-21 STROBOSCOPES. Bulletin describes how the stroboscope works, and its application to industrial uses. General Radio Co., 275 Massachusetts Avenue, Cambridge 39, Mass.

1-22 SLASHERS. Information on complete line of textile slashers and related equipment. West Point Foundry and Machine Co., West Point Georgia.

BOOKLETS

raw stock to roving

T-101 LUMMUS PEPPER - SHAKER OPENER. Gives complete details and protographs. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-102 STATIC ELIMINATION. How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

T-103 CARD GRINDING INFORMATION. Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

T-104 CARD CLOTHING. Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

T-105 VERSA - MATIC DRAWING FRAME. Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

T-106 SARGENT OPENER. Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-107 FEATHERTOUCH DRAFTING. How to get "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

T-110 BOBBINS. Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fibre Co., Wilmington, Del.

T-111 MAGNETIC IDEAS. Booklet shows uses of permanent magnetic separation equipment in opening room as well as throughout mill. Removes tramp iron, prevents fires. Eriez Mfg. Co., Erie, Pa.

T-112 ADVANTAGES OF ALDRICH PICKERS. Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-113 NEW CONDENSER TAPE. Describes Supr-O-Tape, an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-119 FIBER METER. Automatic weighing and blending assures quality, holds variation to 1%. James Hunter, Inc., P. O. Box 298, Mauldin, S. C.

T-120 PIN DRAFTERS. Textile job report No. 21 tells how Warner & Swasey Pin Drafters help modify jute systems for carpet yarns. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

T-121 UNIVERSAL CARD COILER. Literature describes both head and base swivel for adjustment. Includes data on 90-day free trial. McDonough Power Equipment, Inc., McDonough, Ga.

T-122 RECONDITION OPENING & CLEANING. Bulletin gives whys and wherefores of reconditioning your opening and cleaning lines. Special attention given to each machine with suggestions as to parts replacement. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-123 COILER CONVERSIONS. Full facts on low initial cost conversion to larger coiler cans. Lists advantages, has complete description. Southern States Equipment Corp., Hampton, Ga.

T-124 CARD DRIVE. Bulletin 301-a describes simple, safe, efficient individual card drive. Southern States Equipment Corp., Hampton, Ga.

T-132 PROCTOR SUPER PICKER. Data sheet gives details of the Proctor Super Picker for use on slabs of baled cotton, or wool and synthetic blends in layers up to 12" thick. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-133 ANTI-STATIC AGENT. Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

yarn and warp making

T-201 PRODUCTS FOR SPINNING AND WEAVING. Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

T-202 NEW BOBBIN MANUAL. Complete bobbin guide. Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

T-203 SPINDLE OIL. "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

T-205 HIGH SPEED AUTOMATIC QUILLER. Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

T-208 PACKAGED SPINNING MODERNIZATION. Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

T-209 SECTIONAL WARPER. Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

T-210 CONICAL RINGS AND FLYERS. Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

T-211 PRECISE WINDING MACHINE. For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

T-212 AUTOMATIC CLEANING EQUIPMENT. Working details and advantages of the Tri-Rail Cleaner. American MonoRail Co., 111 East 200th St., Cleveland 17, Ohio.

T-216 SPINNING FRAME CONVERSIONS. Big-package, new-frame results at half the cost. Meadows Mfg. Co., P. O. Box 10876, Station A, Atlanta, Ga.

T-217 COLLECTO-VAC. New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

T-219 SPINNING AND TWISTER RINGS. Complete details, pictures, price list. Whitinsville Spinning Ring Co., Whitinsville, Mass.

T-222 SUCTION CLEANING SYSTEM. Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

T-223 FACTS ABOUT YOUR FLYERS AND SPINDLES. Advantages of smooth flyer and spindle operation. Ideal Machine Shops, Bessemer City, N. C.

T-225 LAPLESS ENDLESS SPINNER. Full information available. Ton-Tex Corporation, 31 Columbus Ave., Englewood, N. J.

T-226 WORSTED SPINNING. Describes five stages from top to yarn. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-227 SPINDLE OILING MACHINE. Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

T-228 HANDY SPINNING REFERENCE. Shows traveler speeds, sizes of ring flanges. Saco-Lowell Shops, Parts Replacement Division, P. O. Box 327, Greenville, South Carolina.

T-229 UNIRAIL UPTWISTER. Higher yarn quality and better packages at faster speeds. Leesona Corp., P. O. Box 1605, Providence, R. I.

T-230 PRECISION TEXTILE WINDING. Tensions and density control for winding rubber cones. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-231 CONE WINDER. Describes Model 102 winder, including applications. Foster Machine Co., Westfield, Mass.

T-232 SHORT CUT TO STAPLE FIBER SPINNING. Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

T-233 WEAVER'S KNOTTER. Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

T-234 TEXTILE ROLL COVERINGS. Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

T-239 LARGE PACKAGE TWISTER. Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 10876, Sta. A, Atlanta, Ga.

T-241 PACEMAKER TWISTERS. Folder gives details on high production, outlines notable features. Whitin Machine Works, Whitinsville, Mass.

T-242 RING SPINNING FRAME. Folder presents description, illustrations and specifications of up-to-date Simplex ring spinning frames. Davis & Furber Machine Co., North Andover, Mass.

T-243 ANTI-FRICTION TWISTER BEARINGS. Find out how bearings helped make The Meadows Twister almost friction-free. Fafnir Bearing Company, New Britain, Conn.

T-246 BETTER BEAMS. Information on three ways to make better beams. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-249 VARI-SPEED MOTOR PULLEY. Describes variable speed control through use of simplified three-major-part disc-assemblies with only one lubrication point. Reeves Pulley Co., Reliance Electric & Engineering Co., Columbus, Ind.

T-250 SPINNING MODERNIZATION Booklet shows how lower costs and improved quality are obtained by spinning modernization. Roberts Company, Sanford, N. C.

BOOKLETS

T-255 NEW BOBBIN HOLDER. Details on streamlined, positive latching bobbin holder. Whitehead Die Casting Co., 1140 Zonolite Rd., Atlanta, Ga.

slashing—weaving—tufting

T-301 COUNTING AND MEASURING DEVICES. Wide range of counting devices for all types of textile machinery. Veeder-Root, Inc., Hartford, Conn.

T-302 LOOM SUPPLIES. Describes complete line. E. H. Jacobs Northern Division, The Bullard Clark Co., Danielson, Conn.

T-304 LOOM PRODUCTION CHARTS. Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

T-306 THE STORY OF STARCHES. History and information on manufacture and use of starches. National Starch & Chemical Corp., 750 Third Ave., New York 17, N. Y.

T-308 STEEL WARP BEAMS. Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

T-309 PENFORD GUMS IN TEXTILES. Describes their excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-312 AIR SLASHER DRYER. Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-313 BUTT-TACKING SEWING MACHINE. Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

T-314 LOOM REED BOOKLET. Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

T-315 COCKER EQUIPMENT. information on warp sizer, beam warper, creels, tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

T-318 FORMULAS FOR SLASHING ARNEL. Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

T-319 ECLIPSE STARCHES FOR TEXTILES. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-321 COCKER SLASHERS. Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

T-322 MOUNTS FOR LOOMS. Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

T-323 UNIFIL LOOM WINDER. Describes new concept of filling preparation which needs no quilling area. Leesona Corp., P. O. Box 1605, Providence, R. I.

T-324 ALIGNING LAYS. Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

T-325 TRAVELING LOOM CLEANER. Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

T-326 DRAPER REPAIR PARTS CATALOG. Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

T-327 BALING PRESSES. Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

T-328 TEXTILE MACHINERY PARTS CATALOG. Describes complete line of Dayco and Thorobred textile parts. Dayton Rubber Co., Dayton, Ohio.

T-329 COUNTING DEVICES. Describes complete line of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

T-331 STATIC BARS. Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

T-332 CARE OF DRAPER SHUTTLES. Describes how longer, trouble-free service may be obtained. Draper Corporation, Hopedale, Mass.

T-334 LARGEST SLASHER ORDER IN HISTORY. Folder tells why Springs Cotton Mills bought 25 multi-cylinder slashers. West Point Foundry & Machine Co., West Point, Ga.

T-336 ONE-PIECE SIZING AGENT. Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

T-346 FACTS ON NON-WOVENS. Fact file on non-wovens tells of new machinery, new methods of handling fibers, new bonding agents, etc. Curlator Corporation, Textile Div., E. Rochester, N. Y.

T-347 NEW DRYING SYSTEM. Describes high capacity, custom engineered drying equipment for tufted plants. Dalton Sheet Metal Co., Inc., Dalton, Ga.

T-351 AUTOMATIC STOP MOTION. Complete information available on automatic stop motion for Titan warp tying-in machine. Edda International Corp., 468 Fourth Ave., New York 16, N. Y.

T-353 BACKING FOR TUFTEDS. How to get your tufting necessities with one telephone call. Fulton Cotton Mills, P. O. Box 1726, Atlanta 1, Ga.

T-355 NON-WOVEN FABRICS. Booklet gives outline of nature and history of non-woven and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-358 LOOM SUPPLIES. Information on rod lubricant and applicator, sponge leather bunter, picker. Garland Mfg. Co., 54 Water St., Saco, Me.

T-360 SUPPLIES FOR TUFTERS. Information on yarns for rug tufting or chenille or carpet backing. Piedmont Cotton Mills, East Point, Ga.

T-361 ECLIPSE STARCHES FOR TEXTILES. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-362 SIZE THAT SATISFIES. Information on getting the correct size package for your mill. Also on Bingham line of slasher rolls. Stodghill & Co., 716 Ponce de Leon Place, Atlanta, Georgia.

T-363 RUBBER COVERED SLASHER ROLLS. Handy booklet tells how to get longer life and better performance from rubber covered rolls. Includes data on handling, storing and grinding. Stowe-Woodward, Inc., Dept. C., 181 Oak St., Newton Upper Falls 64, Mass.

knitting

T-401 SINGLEHEAD FULL - FASHIONED MACHINE. Literature on request from the Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-403 RASCHEL KNITTER. Describes new Raschel-type knitting machine. Kidde Textile Machinery Corp., Inc., Farrand St., Bloomfield, N. J.

T-406 NEEDLE OIL DOES NOT STAIN. Details on "Gulftex 39" developed for knitting mills. Gulf Oil Corp., P. O. Box 1106, Pittsburgh 30, Pa.

T-407 KNITTING MACHINES. Information on Wildman "TFS" 30" single section F-F machines and "AL" 32" diameter 32-feed "single purpose" circular interlock machine (rib type) Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-409 KNIT GOODS FINISHING MACHINERY. Data on calenders, shrinkers, curers, extractors, steamers. Tubular Textile Machinery Corp., 33-61 54th St., Woodside, N. Y.

T-410 "READING" TYPE 60 F-F KNITTING MACHINE. Information about the new "Reading" Type 60, 38-section automatic full-fashioned hosiery knitting machine. Write Textile Machine Works, Reading, Pa.

wet processing

T-500 CLOTH GUIDES. Bulletin 22.1 provides application diagrams and illustrations. GPE Controls, Inc., 240 E Ontario St., Chicago 11, Ill.

T-501 TUBES FOR PACKAGE DYEING. Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

T-502 FINISHING MACHINERY. Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

T-503 WATER ANALYSIS. Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-504 UREA FORMALDEHYDE. Literature on urea formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-506 CATIONIC SURFACE ACTIVE AGENT. Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-507 CONTINUOUS STARCH COOKER. Booklet shows how the use of continuous cookers for starch assures accurate control, economy, low maintenance in warp sizing and finishing. Clinton Corn Processing Company, Clinton, Iowa.

BOOKLETS

T-508 PEROXIDE BLEACHING SYSTEM. Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept., Wilmington, Del.

T-510 TEXTILE CHEMICALS. Describes leading products for wet processors. Royce Chemical Co., Carlton Hill, N. J.

T-512 DEPUMA. Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., 2010 Clarke Bldg., Pittsburgh 19, Pa.

T-513 CATALYST AC-6. Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Springfield 2, Mass.

T-514 SODA ASH BULLETIN. Contains useful data covering this subject. Solvay Sales Division Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-516 ALUMINUM CHELATE PEA-1. Technical data sheet tells how aluminum Chelate PEA-1 may be used with advantage in many applications where aluminum is proplate is unsatisfactory. Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-517 CHEMICAL CATALOG. Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

T-519 HYDRAULIC POWER UNITS. Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

T-522 CUT WATER TREATMENT COSTS. Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

T-526 HYCAR LATICES. Physical properties and typical fields of application. B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, O.

T-527 SODIUM HYDROSULFITE. Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

T-528 ETHANOLAMINES. Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-531 ROTARY DYEING MACHINE. For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

T-534 DYEING AND FINISHING MACHINERY. Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

T-535 DYEING, BLEACHING AND DRYING EQUIPMENT. Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

T-536 NAPTHOL RATIOS SLIDE CHART. Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

T-540 PENFORD FINISHING GUMS. Complete data, including physical properties. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-541 REGENERATION OF ZEOLITE WATER SOFTENERS. Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

T-542 DYEING SYNTHETIC FIBERS. Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-543 INDUSTRIAL BRUSHES. Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-544 WASTE HEAT RECOVERY Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

T-545 WASHERS FOR SCOURING, BLEACHING, ACIDIFYING. Describes highcapacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-546 NAPHTHOL FOR LIGHTFAST BROWNS. Booklet describes new, straight, non-substantive naphthol, Naphthol As-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-547 SOFTENER, LUBRICANT, NAPPING AID. Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

T-548 HANDBOOK ON METHOCEL. Gives technical information and use data on family of methylecellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

T-549 WALL CHARTS FOR HANDLING, TESTING H_2O_2. Two 16" x 21" wall charts available, one on handling and the other on testing H_2O_2. Becco Chemical Div., Food Machinery & Chemical Corp., Buffalo 7, N. Y.

T-550 POLYVINYL ACETATE EMULSION. Bulletin contains a description of Celanese emulsions and cites advantages of Celanese polyvinyl acetate emulsions in textile finishing. Celanese Corp. of America, Plastics Div., 744 Broad St., Newark 2, N. J.

T-554 INSTRUMENT CATALOG. Complete information on industrial instrument accessories and supplies. Includes specifications, parts numbers and prices. Catalog 500, Foxboro Co., Foxboro, Mass.

T-556 HUNTER DYEING EQUIPMENT. Describes fully with diagrams Hunter Model A Dye Becks, Hunter No/Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. James Hunter Machine Co., North Adams, Mass.

T-557 HIGH ACTIVITY CATALYST. Technical bulletin describes new catalyst AC-6 which provides increased activity, excellent bath life, minimum odor formation, etc. Monsanto Chemical Co., Plastics Div., Springfield, Mass.

T-558 CATIONIC DYE LEVELER. Bulletin TX-34 gives new information on dye leveler for acid colors on nylon tricot and wool through use of Nopco 1425-B. Nopco Chemical Co., Textile Chemicals Div., Harrison, N. J.

T-559 FLOW CONTROL Complete information on largest selection of values to handle flow control requirements. William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

T-561 PUMP POURABLE PASTES. Bulletin tells how Moyno pumps can pump any textile liquid that can be forced through a pipe, even if highly viscous or corrosive. Robbins & Myers, Inc., Springfield, Ohio.

T-563 POLYETHYLENE FINISHING AGENT. Booklet contains information needed to adopt Emulsifiable A-C polyethylene as a finishing agent to any particular process. Semet-Solvay Petrochemical Div., Allied Chemical Corp., 5th Floor T, Rector Street, New York 6, N. Y.

T-564 HYDROGEN PEROXIDE BLEACHING. Booklet discusses advantages, operating details and savings in chemical costs of Activated Hydrogen Peroxide Bleaching Process for Cotton. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-566 ETHYLEX GUMS. Brochure describes properties of hydroxy ethyl ether derivatives of corn starch. Applications of these noncongealing gums in warp sizing and finishing covered. A. E. Staley Mfg. Co., Box 151, Decatur, Ill.

T-570 CARPET DRYERS. Details, pictures, drawings on driven roll, conveyor, and tenter types. Andrews and Goodrich Div., 336 Adams St., Boston Dorchester, Mass.

T-571 CHAINLESS MERCERIZING MACHINE. Two new bulletins provide complete information on the Benninger Chainless Mercerizing Machine for piece goods. H. W. Butterworth & Sons Co., Bethayres, Pa.

T-572 DYEING MACHINERY FOR EVERY PURPOSE. Illustrated literature available on complete line of automatically controlled machinery. Gaston County Dyeing Machine Co., Stanley, N. C.

T-576 YARN PREPARATION. Describes products for yarn preparation, printing, finishing. Polymer Industries, Springdale, Conn.

T-577 STAINLESS DRY CANS. Information on stainless steel, 75 psi, reverse dished, head dry cans. Can be furnished Teflon-coated if desired. Sims Metal Works, West Point, Ga.

T-579 AUTOMATIC GUIDING EQUIPMENT. Catalog shows various types of automatic guiding equipment for accurate cloth guiding. Fife Mfg. Co., Inc., P. O. Box 9815, Oklahoma City, Okla.

fibers and yarns

T-601 FORTISAN-36, NEW TEXTILE FIBER. Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

T-602 CAPROLAN NYLON HEAVY YARNS. Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

T-603 RAYON—MILE BY MILE. Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

T-604 THE CHEMSTRAND NYLON STORY. Describes the birth and growth of Chemstrand Nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

T-605 COLOR-FAST FIBERS. Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to colorfastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

T-606 "DIAL-A-FIBER." Ingenious circular chart indicates properties and compatabilities of "Uvitex" for application on natural and synthetic fibers. Ciba Co., Inc., Route 208, Fair Lawn, New Jersey.

T-607 THE STORY ON LUREX. Information on metallic yarns and how they are developed to broaden the scope of the weaving, knitting, braiding, tufting, embroidery, lace, quilting and wet processing industries. Specify interest. Textile Fibers Department, Product Information Service, The Dow Chemical Company, Williamsburg, Virginia.

BOOKLETS

T-608 TASLAN TEXTURED YARNS. Technical information on dyeing and finishing of new fabrics made with Taslan. E. I. du Pont de Nemours & Co., Wilmington 98, Delaware.

T-609 PROCESSING NYLON STAPLE. Data sheet describes method of processing Du Pont 42 Nylon Staple in blends with cotton. Covers complete operation through sizing. Bulletin N-93, E. I. du Pont de Nemours & Co., Inc. Wilmington, Del.

laboratory

T-701 TESTING INSTRUMENTS. Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearny, N. J.

T-703 SHADOGRAPH WEIGHING DEVICES. Pictures and information on various types of scales. Exact Weight Scale Co., Columbus 8, Ohio.

T-705 STROBOTAC. Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., West Concord, Mass.

T-706 YARN COUNT SCALE. Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn number. Exact Weight Scale Co., Columbus 8, Ohio.

T-712 AUTOMATIC MOISTURE CONTROL. Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics. Hunter Controls, Inc., Div., James Hunter Machine Co., North Adams, Mass.

services for management

T-801 FACTORING SERVICE. Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

T-802 NON-WOVEN FABRICS. Report includes how non-woven fabrics are made, machinery involved, sample fabrics. Textile Fibers Dept., E. I. du-Pont de Nemours & Co., Inc., Wilmington 98, Del.

T-805 PROFIT THROUGH FACTORING. Brochure gives facts on the use of factoring as a modern plan for developing sound business growth and added profits. Walter E. Heller & Co., Dept. TI-2, 105 W. Adams St., Chicago 99, Ill.

T-807 GROUP INSURANCE. Information on how textile group insurance can insure the happiness of your employees and make for a better running mill. Provident Life and Accident Insurance Co., Group Dept., Chattanooga, Tenn.

T-808 FACTORING. Complete details on services offered as mill factors. L. F. Dommerich, 271 Madison Ave., New York, N. Y.

T-810 THE WONALANCET WAY is the title of an editorial booklet published five times a year dealing with current problems. Write Wonalancet Company, 128 Burke St., Nashua, N. H.

T-812 BEECHCRAFTS AT WORK. Booklet available from Southern Airways Company shows how Beechcraft executive airplanes can save executives time and money. Write Southern Airways Co., P. O. Box 718, Atlanta, Ga.

T-818 TEXTILE ENGINEERING. Information on complete, integrated service covering every type of textile project. Robert & Co. Assoc., 96 Poplar St., N. W., Atlanta 3, Ga.

T-819 ORGANIZED LUBRICATION PAYS. Planning book entitled "Management Practices that Control Costs via Organized Lubrication" shows how to effect savings in five areas of plant operation. Available from Texaco, Inc., 135 E. 42nd St., New York 17, N. Y.

T-821 INVENTORY CONTROL. How a daily report of inventory condition mechanically produced on existing business machines showed a net direct payroll saving of more than 10,000 a year. Administrative Methods Dept., Werner Textile Consultants, 1430 Broadway, New York, N. Y.

plant operation

T-902 BELT LACING EQUIPMENT. Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

T-903 "MOTOR SELECTOR." How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

T-904 GEARMOTORS, MOTORGEARS, AND FLUID DRIVES. Catalog supplies complete information on double, triple, and quadruple reduction gearmotors and motorgears. Electrofluid and fluid drives are also explained. Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

T-907 WRAP UP LINT PROBLEMS. Automatic lint filter removes lint from air, winds it into disposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

T-908 TEXTILE MOTORS. Bulletin describes complete line of textile motors. Diehl Mfg. Co., Finderne Plant, Somerville, N. J.

T-909 COMPRESSORS. WB two-stage water-cooled. Space-saving units require modest foundation up to 125 psi and 1150 cfm displacement. Bulletin WB-10. Gardner-Denver Company, Quincy, Illinois.

T-910 MODERN LUBRICATION METHODS. A report to management tells how modern lubrication methods can help save thousands of dollars in three major economic areas of textile plant management. Describes twelve operating advantages of automatic lubrication systems. Lincoln Engineering Co., 4010 Goodfellow Blvd., St. Louis 20, Mo.

T-911 LEATHER BELTING. Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

T-912 STORY OF NYLON BRISTLE. Tells of discovery and production, with special attention to "Tynex," a form of nylon ideal for use in brushes. M. W. Jenkins' Sons, Inc., 444 Pompton Ave. Cedar Grove, N. J.

T-913 "ONE-SHOT" LUBRICATORS. Bulletin describes wide field of application for one-shot lubricators on machines requiring closely controlled but infrequent oil feed. Bijur Lubricating Corporation, Rochelle Park, N. J.

T-914 INDUSTRIAL GREASES. Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

T-917 BLOWERS AND EXHAUSTERS. Full description, including detailed drawings. Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.

T-918 PAINT STRIPPING BOOKLET Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

T-921 CATALOG OF NEEDLE BEARINGS. Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

T-924 BALL BEARINGS FOR TEXTILE MACHINERY. Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

T-925 LUBRICATION OF BEARINGS. Helpful list of do's and don't to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

T-931 NEW V-BELT DRIVES. Bulletin contains information on selection and operation of V-belt drives. Covers all types of V-belt drives. Dodge Mfg. Corp., Mishawaka, Ind.

T-932 SMOOTH ACCELERATION, DECELERATION. Describes eddy-current equipment for smooth, stepless acceleration and deceleration. Eaton Mfg. Co., 3307 14th Ave., Kenosha, Wis.

T-933 CATECHISM OF ELECTRIC MACHINERY. Booklet contains complete technical treatise on various electrical machines. Electrical terms defined. Fairbanks, Morse & Co., Fairbanks-Morse Bldg., Chicago 5, Illinois.

T-937 V-BELTS. Tells how raw materials and finished belts are tested and inspected. Quality control and experimental production covered. Booklet 5-51107, Dept. 794, Goodyear Tire & Rubber Co., Akron 16, Ohio.

materials handling

T-1005 Tramrail Engineering And Application. Data on how Tramrail equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

T-1007 Materials Handling For Textiles. Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

T-1013 Trucks Doff, Store, Become Spooler Tray. Brochure tells how mobile boxes are being used as doff boxes, storage boxes, and spooler trays on Barber-Colman spooler. Fisher Mfg. Co., Hartwell, Ga.

T-1014 Carpet Cores, Storage Tubes. Literature on simplified storage and better cores for rugs. Sonoco Products Co., Hartsville, S. C.

T-1015 Overhead Conveyor. Catalog features "Cable-Way" Overhead Conveyor which has low-cost, ease of installation, quiet operation and long life. Conveyor Division, The American Mono-Rail Co., Fourth and Franklin Sts., Tipp City, Ohio.

T-1016 Guide To Better Closures. For use as a guide for the evaluation of methods currently in use to effect economy and better production in the closure of fiber board boxes. Acme Steel Products Div., Acme Steel Co., 135th and Perry Ave., Chicago, Ill.

T-1020 Automatic Wrapping. Tells how automatic packaging increases the sales appeal of textile products. Saves labor and materials and adds tamper-proof product protection. Write Hayssen Mfg. Co., Sheboygan, Wis.

T-1021 Tubes, Bobbins, Pirns. Information on world renowned yarn carriers, reliable as to stability, dimensions, weight. Emil Adolff (U. S. A. agents: Textube Corp., 695 Summer St., Stamford, Conn).

T-1022 Strong Cores. Data on lightweight, quality tubes and cores for textiles. Star Paper Tube, Inc., Rock Hill, S. C.

T-1023 Materials Handling. Describes lightweight, durable, smooth products. Spaulding Fibre Co., Inc., Dover, New Hampshire.

T-1024 Conditioning Truck. Details on all - aluminum, non - rusting conditioning truck. Excel, Inc., Lincolnton, N. C.

PERSONAL NOTES

Dr. Harley Y. Jennings has joined the Textile Research Center of the School of Textiles, North Carolina State College, Raleigh, N. C., as visiting research professor of textile chemistry. A retired director of research of Dan River Mills, Inc., Danville, Va., Dr. Jennings will act as advisor in applied chemical research and do some outside consulting.

Garvin Hughes of F. W. Poe Mfg. Co., Greenville, S. C., has been named superintendent of Ivey Weavers, Inc., Hickory, N. C.

Albert B. Bullington, Jr., has been promoted to assistant supervisor of chemical mixing in the finishing department of Union Bleachery, Greenville, S. C., a division of Cone Mills Corp.

R. H. Busby, McComb (Miss.) Mfg. Co., has been elected president of the Mississippi Manufacturers Association. **C. O'Neal Walker,** manager of Erwin Mills, Inc., Stonewall, has been named the association's vice-president of membership, finance, and development.

At Cabin Crafts, Inc., Dalton, Ga., **Virgil H. Hampton** has been appointed vice-president for manufacturing, **W. B. Coffey** has been named assistant treasurer, and **Noble M. McGuire** has been elected as secretary.

Dexie M. R. Mills has resigned his position as standards manager, Fulton Cotton Mills, Atlanta, Ga., to accept the post of investment sales representative with the Atlantic and Pacific Life Insurance Co. of America.

At the recent meeting of the American Carpet Institute, **W. Lyle Holmes,** president and treasurer of Archibald Holmes & Sons, Philadelphia, Pa., was elected chairman of the board of trustees.

The board of directors of the Standard-Coosa-Thatcher Co. has elected **W. Lane Verlenden, II,** to the office of vice-president and assistant treasurer. Mr. Verlenden had served in the position of chief engineer since 1946.

M. Lowenstein & Sons, Inc., has appointed **Robert E. Barton** manager

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of product development and research and **Jack Pruitt** as manager of the new pilot plant in Anderson, S. C.

Dan River Mills, Inc., Danville, Va., has named **Irvin L. Payne** assistant general superintendent of grey manufacturing operations. **Louis DeLoach** has been named to succeed Mr. Payne as superintendent of Dan River's four plants in Alabama. * * * **Paul D. Emery,** who was formerly with Fieldcrest Mills, Inc., Spray, N. C., has been appointed assistant superintendent of the Riverside division.

James M. Pursley, formerly of the Newnan (Ga.) plant, has joined the quality control staff of the Sevier (N. C.) plant of the American Thread Co.

Richard E. Robinson has been named assistant to the president in charge of production of the United Hosiery Co., Chattanooga, Tenn. Until his recent promotion, Mr. Robinson was manager of the firm's plant in Morganton, N. C.

At the Rhodhiss (N. C.) Mills of the Pacific Mills group of Burlington Industries, Inc., **Hardin C. Byars** has been named superintendent of plant No. 1. **J. R. Hefner, Jr.,** has been promoted to superintendent of plant No. 2, and **J. D. Gaston** has been named to succeed Mr. Hefner as general overseer of carding and spinning at plant No. 1. * * * **Bernard L. Coleman** has been placed in charge of Franklinton (N. C.) Fabrics, a unit of the Burlington Mills division. He was formerly superintendent of the Rhodhiss Mills.

David Silver, president of Blanche Cotton Mills, Inc., Augusta, Ga., has been named to the board of trustees of Yeshiva University, New York.

Mr. Abney
Abney Mills

Mr. McKone
Karagheusian

John S. Abney has been named president and treasurer of Abney Mills, Greenwood, S. C., succeeding the late F. E. Grier. Elected to succeed Mr. Abney as secretary of the firm was vice-president John R. Fulp, Jr. Mr. Fulp now serves in both positions.

Peter J. McKone, formerly assistant manager of research and development of A. & M. Karagheusian, Inc., Freehold, N. J., has been appointed chief chemist of the company.

Bart E. Buser has been elected president of Buser, Inc., Paterson, N. J., succeeding **Harry V. Reiner,** who has retired. **Charles P. Weber** has been named vice-president and **George Wagner** secretary.

Chemstrand Corp., New York, has appointed **Walter S. Thayer** men's wear merchandising specialist. * * * **W. Michael Teta** has joined the company as a merchandise representative in market fabrics.

At the recent annual meeting of the Carolina Yarn Association, the following were elected to office for the 1960-61 term: president—**J. B. Anthony,** B. F. Goodrich Co., Greensboro, N. C.; vice-president—**J. Ethridge,** Courtaulds (Ala.) Inc., Greensboro, N. C.; secretary—**Ben Jordon,** of Sellers Mfg. Co., Saxapahaw, N. C.; treasurer—**Wilbur Evans,** Dixie Mercerizing Co., Mebane, N. C.; and executive secretary—**Frank P. Barrie,** Leesona Corp., Charlotte, N. C.

Arthur Etchells, technical director of Hellwig Dyeing Corp., Philadelphia, Pa., has resigned. The secretary of the firm, **Jacob Knupp, Jr.,** and manager of piece goods dyeing, **Milton K. Emerson,** have assumed Mr. Etchells' duties.

The medical library of the Mizell Memorial Hospital has been dedicated to **Fred M. Lyon,** president of Opp Cotton Mills, Inc., and Micolas Cotton Mills, Inc., Opp, Ala. Mr. Lyon is chairman of the hospital board.

R. Hobart Souther, research consultant for Cone Mills Corp., Greensboro, N. C., and **Thomas A. Alspaugh,** a chemist in the engineering department, were honored recently by the Federation of Sewage and Industrial Wastes Associations at the annual banquet in Dallas, Texas, for their research on textile waste treatment. The two gentlemen received the 1958 Industrial Wastes Award for their paper which reviewed current experiments in the field of textile waste treatment at Cone laboratory. * * * In the dyeing department of Union Bleachery, Greenville, S. C., **W. A. Bishop, Jr.,** has been promoted to supervisor of all phases of vat and sulfur jig dyeing, **Robert W. Smith** has been named supervisor of continuous dyeing, and **James L. Evatt** has been made an assistant supervisor of continuous dyeing.

James H. Blore has been appointed to the new position of director of fabric research and development at Fair-Tex Mills, Inc., Catasauqua,

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PERSONAL NOTES

(from page 159)

Pa. Mr. Blore was formerly associated with E. I. du Pont de Nemours & Co., Inc.

At the Valway plant of Callaway Mills Co., LaGrange, Ga., **Paul A. Homier** has been named superintendent and **Robert J. Keithley** has assumed his duties as plant chemist. * * * At the Unity plant **Norman McClellan** has been named assistant overseer of carding. * * * **James E. Hallinan** has joined the research and development division as product development engineer for the products of the Manchester (Ga.) plant. * * * **Charles J. Plant, Jr.,** has joined the engineering department.

Herman Cone, Jr., director of Cone Mills Corp., Greensboro, N. C., is the new chairman of the Northern North Carolina-Virginia division of the Southern Textile Association. Other officers chosen at the recent meeting are: vice-chairman — **Al Jocelyn,** Dan River Mills, Inc., Danville, Va.; secretary—**Charles Ward,** Highland Cotton Mills, High Point, N. C. **Smith Crowe, Jr.,** of Leward Cotton Mills, Worthville, N. C., and **Don Rice,** of Wennonah Cotton Mills, Lexington, N. C., are new directors.

Hugh William Close has been elected president of The Spring Cotton Mills, Fort Mill, S. C., and Springs Mills, Inc., New York, succeeding the late Col. Elliott White Springs. **Mrs. Elliott White Springs** has replaced her late husband on the board of directors of The Springs Cotton Mills. * * * The South Carolina Textile Manufacturers Association has elected Mr. Close to the board of directors.

Joe L. Jennings, executive vice-president of West Point (Ga.) Manufacturing Co., has been elected president of The Georgia Tech National Alumni Association.

William H. Beattie has resigned as chairman of the board of Woodside Mills, Greenville, S. C., but he will continue as a director.

I. B. Grainger, Jr., has assumed his duties as vice-president and assistant to Joseph J. Bird, executive vice-president of Kayser-Roth Hosiery Co., Inc., with offices in Burlington, N. C. Mr. Grainger was formerly vice-president and general manager of Full Knit Hosiery Mills, Inc., a Burlington, N. C., division of Chadbourn Gotham, Inc.

The American Association of Textile Chemists and Colorists has re-elected **Weldon G. Helmus,** president of Fair Lawn (N. J.) Finishing Co., president of the organization. Four vice-presidents were elected as follows: **Dr. W. George Parks,** University of Rhode Island, for Northern New England; **C. T. Anderson,** Ciba Co., Inc., Central Atlantic region; **A. Henry Gaede,** Laurel Soap Mfg. Co., Southern region; **Joseph H. Jones,** Phoenix Dye Works, Western region.

At the meeting of the newly organized Piedmont Chapter of the American Association for Textile Technology held in Charlotte, N. C., recently, **Ajalon A. Tillery** of McCormick (S. C.) Mill was elected chairman. Other officers elected were: vice-chairman, **Prof. D. S. Hamby,** North Carolina State College School of Textiles; secretary, **Dr. A. Frank Tesi,** Celanese Corp. of America; treasurer, **Prof. E. A. McKenna,** Clemson (S. C.) College.

J. Morton Curran, Jr., president of Summerville (Ga.) Mfg. Co., recently resigned as president of William L. Barrell Co. of New York, Inc., to accept a position with

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Iselin-Jefferson Co.

Charles G. Buie, Jr., has been promoted from plant manager and superintendent of Aileen Mills Co., Biscoe, N. C., to general superintendent in charge of manufacturing of the Morgan-Jones group which consists of the mill at Biscoe and Scotland Mills, Inc., in Laurinburg, N. C.

At the Conover, N. C., plant of Riegel Textile Corp., **Charles L. Tarr** has been named general manager succeeding **Adrian L. Shuford, Jr.,** who has resigned. Mr. Shuford continues to serve as a director. * * * **James H. Everett,** formerly associated with Dan River Mills, has joined the Ware Shoals division as director of data processing planning.

At the first annual meeting of Woolens and Worsteds of America, Inc., **G. Norman Winder,** American Sheep Producers Council, was elected president. Other officers elected were: **William Kent,** Kent Manufacturing Co., Clifton Heights, Pa., first vice-president; **Ronald Mitchell,** Cyril Johnson Woolen Co., Stafford Springs, Conn., and **George Ott,** Boston (Mass.) Wool Trade Fund, vice-presidents; **Casey Jones,** American Sheep Producers Council, treasurer; **Robert S. Taplinger,** Robert S. Taplinger Associates, secretary.

The northern group of the woolen and worsted division of J. P. Stevens & Co., Inc., North Andover, Mass., has named **John F. Matthews** assistant general manager.

At the annual meeting of the Durene Association of America held in New York City recently, **R. D. Hall, Jr.,** manager of the yarn department of The American Thread Co., was elected president. **Freeman R. Harris,** vice-president of Standard-Coosa-Thatcher Co., was named vice-president of the association.

T. C. Chalmers has been named plant manager of Hadley-Peoples Mfg. Co., Siler City, N. C., and **P. N. Wallace** has been promoted to plant superintendent.

Edward M. Moir has assumed his duties as vice-president of Crown Woolen Mills, Marcellus, N. Y., and **James Moir** has been named secretary-treasurer.

The Delaware Valley section, American Association of Textile Chemists and Colorists has elected as chairman **Clarence Seibert,** Scholler Bros., Inc., Philadelphia, Pa. Other officers are: vice-chairman—**Edward G. Haack,** General Dyestuff Co.; secretary—**Ernest W. Empting,** Verona Dyestuffs; treasurer—**Charles N. Kuzman, Jr.,** Amalgamated Chemical Corp.

Robert H. Hundley, Jr., formerly associated with Rosemary Manufacturing Co., Roanoke Rapids, N. C.,

Mr. Hundley

has been named general superintendent of Corlin Processing Co., Inc., Landis, N. C.

George A. Browder, formerly superintendent of the Hannah Picket Plant of the Woolen & Worsted Division of J. P. Stevens & Co., Inc., in Rockingham, N. C., has been promoted to manager of Hannah Picket and also the new Martha Baum Plant in Rockingham (see page 162 of this issue). Named to succeed Mr. Browder was **Jack A. Bradford.** Superintendent of the Martha Baum Plant is **Francis D. Everhart.**

OBITUARIES

Murray Wheeler Dunlap, 87, formerly president of Mobile (Ala.) Cotton Mills, Inc.

Carlton Hall, 43, vice-president of Hall Textile Machinery Co., Charlotte, N. C.

Arthur O. Hefner, Sr., 60, textile inspector for the U. S. Government and at one time superintendent of operations at the former Brookford (N. C.) Mills.

Henry P. Kendall, 81, board chairman of The Kendall Co., Boston, Mass.

William Meyer, 70, president of the former Apex Hosiery Co., Philadelphia, Pa.

Harry A. Cody, Sr., 80, formerly secretary-treasurer of Ripon Knitting Works, Ripon, Wis.

John J. Connorton, 54, formerly wool buyer and merchandise manager of the spun synthetics division in The American Thread Co., New York.

Herman S. Dersch, 70, president of King Craft Hosiery Mills, Inc., Mint Hill, N. C.

Continued on next page

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PERSONAL NOTES

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Obituaries continued

William G. Diamond, 64, president of Victor Dye Works, Philadelphia, Pa.

Thomas Dowd, 65, president of Ming Toy Dyeing Co., Paterson, N. J.

William A. Foster, 68, formerly president of Foster Yarn, Inc., Trenton, N. J.

Francis Gutekunst, 64, treasurer of Hellwig Dyeing Corp., Philadelphia, Pa.

Reginald Lee Harris, 69, chairman of the board of Roxboro (N. C.) Cotton Mills.

Allen Fletcher Johnson, 90, retired president and treasurer of American Spinning Co., Greenville, S. C., and Florence Mills, Forest City, N. C.

W. H. Muse, 70, formerly assistant manager of Erwin Mills', Erwin, N. C., plants.

H. Edwin Newham, 53, vice-president in charge of sales for Lea-Wayne Knitting Mills, Inc., Morristown, Pa.

Henning W. Prentis, Jr., 75, chairman of the board of Armstrong Cork Co., Lancaster, Pa.

Warren Shenk, 43, sales engineer for Scott & Williams, Inc., for the New York and New England area.

Harder Smith, 55, founder and president of Akom Knitwear Co., Inc., New Canaan, Conn.

Marshal L. Smith, 84, former president of the Laurens (S. C.) Cotton Mills.

George Threlfall, 56, a founder and co-owner of Philadelphia Piece Dyeing Co., Philadelphia, Pa.

Aloysius L. Wall, 68, formerly production manager for Nicetown Dye Works, Philadelphia, Pa.

Jay C. Woodburn, 53, field engineer for Scott & Williams, Inc., Laconia, N. H.

MILL NOTES

A 68,000 sq ft addition to **Lydia Cotton Mills,** Clinton, S. C., is planned to permit more efficient arrangement of existing equipment. * * * Concrete oval skating rinks have been constructed at the **Clinton (S. C.) Cotton Mills** and Lydia Cotton Mills to provide a safer and more enjoyable place for children of employees to skate.

J. P. Stevens & Co., Inc., has announced plans to build a new $3 million plant for the finishing of blended fabrics on the same property with the Delta Finishing Plant near Cheraw, S. C. Schedules call for completion of the building by May 15 and for the plant to be in operation by late July or early August, 1960. * * * The properties in Rockingham, N. C., recently acquired by Stevens are being renovated and equipped with modern machinery for the manufacture of fine grade worsted fabrics. Designated the Martha Baum Plant, the new facility is already in operation, and it is anticipated that all machinery will be installed by the end of April. * * * A safety plaque has been presented to the employees of the Victor plant, Greer, S. C., of J. P. Stevens & Co., Inc., by Liberty Mutual Insurance Co. in recognition of their having amassed more than 4 million man-hours without a lost-time accident.

A certificate of appreciation from the management was presented recently to the employees of the grey mill, **Riegel Textile Corp.,** Trion, Ga., division, for having amassed 6 million man-hours without a disabling injury.

Agawam Dye Works, Inc., Lawrence, Mass., has announced the acquisition of **Thies Dyeing Mills, Inc.,** West Warwick, R. I. The plant will be operated as a separate corporation, doing commission package dyeing and bleaching, skein dyeing, and glazing, and selling colored yarns. Walter Sturrock, formerly assistant treasurer of Thies, has been named general manager.

Avondale Mills, Sylacauga, Ala., has announced that one silver dollar will be paid to each person in an Avondale plant which has no justified customer complaint for four consecutive weeks. J. Craig Smith, president of Avondale, commented: "I am fully aware that the dollar in itself is not an incentive which would be expected to produce results. I do feel that the recognition of a job well done will help us turn out a better product."

Hanes Hosiery Mills Co., Winston-Salem, N. C., has increased its capital stock authorization from $5 million to $25 million.

The Top Co., Boston, Mass., has purchased **American Silk Spinning Co.,** Providence, R. I., which will be operated as a wholly-owned subsidiary.

The **Clifton (S. C.) Manufacturing Co.** recently sold 32 houses and lots to employees of the company.

Texas Textile Mills, Inc., Dallas, Texas, has announced plans to close the Waco plant and consolidate operations at the plant in McKinney by the end of last year. The move was necessary for the company to continue operations, an official explained. Obsolete equipment in the McKinney mill is being replaced to improve its efficiency.

A special memorial edition of "The Springs Bulletin," employee publication of **The Springs Cotton Mills,** Fort Mill, S. C., depicted the life of the late Col. Elliott Springs who was president of the firm for 28 years.

In recognition of outstanding accident prevention effort, Arbeka Webbing Co., Pawtucket, R. I., recently received the Certificate of Safety Achievement from the United States and Rhode Island Departments of Labor. Pictured here on the occasion of the presentation are (l to r): William D. Cuthbertson, vice-president of Arbeka; William J. Ferguson, R. I. state inspector; Frank W. Marcaccio, R. I. state chief of inspection; Frederick P. Bowden, Jr., president of Arbeka; Frank McEntee, assistant manager of Textile Workers Union of America; Eugene Lachapelle, R. I. state Director of Labor (representing U. S. Secretary of Labor James P. Mitchell), and James H. Hopkins, president of Local 1390, TWUA.

Chopak Fabrics, Inc., South Williamsport, Pa., has completed an expansion program which has doubled the capacity of the mill. New machines have been installed, and the plant is in full production on acetate tricot fabrics.

Camp and McInnes, Reading, Pa., has purchased the 3,000 sq ft building which housed the former Pentagon Hosiery Co. and will transfer its finishing, warehousing, and shipping departments to the location.

Ground has been broken for the new 35,000 sq ft research laboratory of **Joseph Bancroft & Sons Co.,** Wilmington, Del. The facility will house the entire engineering department and expansion of the comany's chemical and products research departments.

Pearce Woolen Mills, Inc., Latrobe, Pa., will cease operations and consolidate with Woolrich (Pa.) Woolen Mills. The transfer will be made around April 1.

A $500,000 expansion program is planned for the Henderson (N. C.) Cotton Mills, a unit of **Harriet-Henderson Cotton Mills, Inc.** The present one-story building will be converted to a two-story building and additional processing machinery installed to increase production. * * * At the company's Berryton, Ga., plant production capacity is to be increased by 50 per cent with installation of 4,000 additional spindles and auxiliary equipment.

Belue Knitting Mill, formerly located in Landrum, S. C., has been moved to the Bruce building in Campobello, S. C.

A new $400,000 building is being constructed in Sanford, N. C., to house the **Federal Spinning Corp.** The plant scheduled for completion this month, will manufacture synthetic yarn and will employ about 120 persons.

Carolina Mills, Inc., has announced a $750,000 expansion program for two of the company's three mills in Newton, N. C. At Mill No. 3 a new building will be constructed and the weave room enlarged to accommodate 200 additional looms. At Mill No. 4 the bleachery capacity will be doubled and additional office equipment purchased.

A joint expansion program which will create an additional 150 jobs in the two plants has been announced by **Templon Spinning Mills, Inc.,** and **Chemspun Yarns, Ltd.,** Mooresville, N. C. A March completion date is scheduled.

Indian Head Mills, Inc., has leased the Glendale and Whitney, S. C., plants which the firm recently sold to Edward Krock of Worcester, Mass., and will continue to operate the mills.

Nu-Vogue Hosiery Mills, Inc., Graham, N. C., has ceased operations.

The West Boylston Mfg. Co. of Ala., Montgomery, Ala., is no longer a separate corporation operating as a subsidiary of United Elastic Corp. The corporation has been dissolved and the mill is now operating as a division of the parent firm.

Boaz (Ala.) Mills, Inc., with a cotton system yarn mill in Boaz and a

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MILL NOTES

(from page 163)

woolen system mill in Guntersville, has been purchased by a group of Georgia mill men. New officers of the firm are: president—Ernest Wetherbee of Albany; executive vice-president—J. Rollins Jolly of Dalton; vice-presidents—Harold and Francis Wetherbee of Albany; secretary-treasurer—Blanton Mills of Albany. No change is contemplated in personnel or type of yarns produced, the new owners indicated.

The thermal underwear and sportswear division of **J. E. Morgan Knitting Mills, Inc.,** Tamaqua, Pa., has moved into the 30,000 sq ft building recently purchased by the firm and formerly occupied by Sprite Manufacturing Co. According to the announcement, 100 additional persons will be employed when more production equipment has been installed.

A new wet processing firm, **Hilltex Dyeing & Finishing Corp.,** has started operations at 102 Fifth St., Paterson, N. J. Pat Maselli is president and head dyer, and Michael Laneve is head finisher and secretary-treasurer.

Ansonia Mills Inc., Taunton, Mass., has announced installation of special knitting machines for the production of power net for the foundation garment trade.

Artloom Industries, Inc., Philadelphia, Pa., subject to the approval of the stockholders, will change its name to Trans-United Industries, Inc., to reflect the diversified nature of Artloom's operations through its newly acquired subsidiaries.

Building programs have been launched at the **Spartan Mills** plants in Spartanburg, S. C. The weave room at the Spartan Division will be expanded and the cloth room at the Beaumont Division will be relocated.

La France Industries, Inc., New York, with plants in the U. S. and Canada, has been purchased by a new company headed by Henry A. Hafner. Other officers are: vice-presidents—Harold R. Hafner, John A. Boland, Jr., and Kendall T. Greenwood; vice-president and treasurer, D. J. R. Huffredini. George B. Kimpton is president of the Canadian subsidiary.

At the annual convention of The South Atlantic Council of Industrial Editors held in Asheville, N. C., recently, "The Joanna Way," publication of **Joanna (S. C.) Cotton Mills Co.,** was cited as the "best magazine-type publication" for 1959. James

Mr. Sloan

P. Sloan, director of industrial relations at Joanna, is editor of the monthly employee magazine.

A suggestion system has been instituted by **The American Thread Co., Inc.,** that will pay employees cash awards as high as $5 thousand for useful ideas. Suggestion boxes, well-stocked with suggestion blanks, have been placed at strategic locations throughout the company's mills. The more money an idea saves, the greater the award for the suggestion. * * * The Newnan (Ga.) plant has been closed. Plans are to sell the plant as a going concern, moving some machinery to the Tallapoosa (Ga.) plant. George L. Hodges, Jr., superintendent, has been transferred to the plant in Tallapoosa.

The Rockmart, Ga., plant of **Goodyear Tire and Rubber Co.** recently celebrated its 30th anniversary.

John P. Baity, formerly associated with E. I. du Pont de Nemours & Co., Inc., and Mrs. Canella Beckwith Baity have purchased **Softspun Knitting Mills, Inc.,** Henderson, N. C.

Membership of the 25-year club of **Cannon Mills Co.,** Kannapolis, N. C., is now 4,749 following recognition of 499 new members at the 22nd annual dinner honoring veteran employees.

Melville Textile Print Works, Inc., Bronx, N. Y., has purchased the 47,000 sq ft Holgate Toy Co. plant in Statesville, N. C. The plant will be used for the company's screen printing operation, and 150 persons will ultimately be employed. The plant in New York will be closed.

Calvine Cotton Mills, Inc., Charlotte, N. C., a subsidiary of Botany Industries, Inc., has purchased two buildings in New Bedford, Mass., formerly owned by Wamsutta Mills. New equipment has been installed and several hundred persons employed at the new plant.

A new 200 hp boiler has been installed at the **Opp (Ala.) Cotton Mills, Inc.** The new boiler, which replaced the 40-year-old boiler, is a four-pass package type gas and oil fired boiler that operates at 80 per cent efficiency.

A new four-year textile scholarship to any one of the nine colleges in the South Carolina Foundation of Independent Colleges, for hourly payroll employees or their dependents, has been announced by the following S. C. firms: **Drayton Mills,** Spartanburg; **Pacolet Yarns, Inc., Abbeville Mills Corp.; Gaffney Mfg. Co.; Gerrish Milliken Mill,** Pendleton; and **Judson Mills,** Greenville.

The regular full-time employees of **Greenwood (S. C.) Mills, Inc.** will be eligible to participate in the profit-sharing-retirement plan which will be put into effect at the end of the 1959 fiscal year, pending the approval of the Internal Revenue Service.

An expansion program estimated to cost $500,000 has been launched at the Royston, Ga., plant of **Candlewick Yarn Mills, Inc.,** a subsidiary of Dixie Mercerizing Co. Plans include the addition of 12,000 sq ft of floor space as well as new spinning equipment. The program is expected to be completed by the first of February.

A new firm, **Dumas (Ark.) Hosiery Mills, Inc.,** has started production with about 15 persons employed.

An expansion program, estimated to cost in excess of $60,000 has been completed at **Browns Hosiery Mills, Inc.,** Burlington, N. C., a member of the Burlington Industries, Inc. family. A two-story building has been constructed which will give an additional 20,000 sq ft of floor space for grey goods storage and shipping. * * * A major expansion program which will increase facilities by 30 per cent is under way at The Steele Plant of **Klopman Mills** in Cordova, N. C., a unit of the Burlington Industries, Inc.

SUPPLIER NOTES

Mr. Burdette
Bennett Rose

Mr. Hall
American Enka

Thomas N. Farr, former assistant secretary of the Columbia (S. C.) Bank for Cooperatives, has joined **James Talcott, Inc.,** as a field representative. With headquarters in Charlotte, N. C., Mr. Farr will service new business in North Carolina, South Carolina, east Tennessee, and Florida.

Miles Chemical Co., one of four divisions of Miles Laboratories, Inc., has announced plans to consolidate all sales-management functions in Elkhart, Ind.

Courtaulds Ltd., and its American and Canadian subsidiaries have formed jointly two new companies to seek and develop opportunities for expanding activities in industries outside textiles. They are Courtaulds North America, Inc., New York, and Courtaulds North America Ltd., Montreal, Canada.

Marshall and Williams Equipment Co., Greenville, S. C., has been appointed to represent the following companies: **Appleton (Wis.) Machine Co.,** manufacturers of schreiner, finishing, chasing, embossing, rolling, and friction calenders, roll type water mangles, and cotton and combination filled rolls for the textile industry; **Industrial Air Co.,** Newton Upper Falls, Mass., manufacturers of tenter dryers, pre-dryers, coating dryers, curing ovens, hoods, and other heating, ventilating, air conditioning, and auxiliary systems; **Ernest Scott & Co., Inc.,** Fall River, Mass., manufacturers of suction systems for mercerizing.

Lustrelizing Corp. of America, Riverside, N. J., has announced a new commercial carpet finishing service, known as Lustrelizing. It is an electrifying process for the treatment of rugs to 20′ wide to give higher pile, richer and more luxuriant luster, brighter colors, and more luxuriant finish. Knitted, woven, and tufted rugs of woolen, woolen blend, or man-made fibers, in high pile and other types, may be given the treatment.

The **H. J. Theiler Corp.** has been named exclusive agent in the U. S. for Ruti Machinery Works Ltd., Ruti, Switzerland, manufacturer of a complete line of looms, slashers, warping machines, dryers for slashers, and vacuum creels. Three specialists have been added to the Theiler sales and service staff. A new building is being constructed on the site of the present plant in Whitinsville, Mass., for equipment service and parts storage.

At ceremonies held in the marketing headquarters of **American Enka Corp.** in New York recently, C. R. Hall, Greensboro, N. C., district manager, was presented a diamond-studded gold pin in recognition of his 30 years with the company. Mr. Hall is the first member of the firm's marketing division to receive this award.

Thomas C. Burdette has been elected president of **Bennett Rose Co.**

Roberts Co. has announced receipt of an order from Clinton & Lydia

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BROOK NEMA RERATE, TOTALLY ENCLOSED, FAN COOLED A.C. MOTORS

Take less space, weigh less, smaller frames than the Brook standard totally enclosed fan cooled motors—yet, performance is equal. 1 to 40 HP*. Built to N.E.M.A. specifications for rerated motors. Same resistance to dust, fumes and moisture as the larger, heavier, standard frame t.e.f.c. motors. Maximum economy and lower first cost because of Brook modern production techniques and world-wide volume distribution. Warehouses, Sales Representatives, and Dealers throughout the country. Write for literature.

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SPOOLS AND BOBBINS

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We Will Cooperate
— To Save You Money.

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SERVING NEW ENGLAND SINCE 1917

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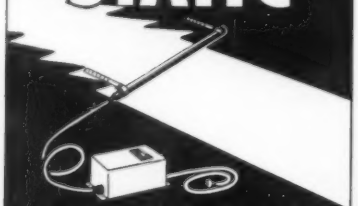

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"Statomatic" MODEL B1

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22 FORE STREET • PORTLAND, MAINE
Originators and Leading Manufacturers of Static Eliminators . . . . . since 1904

SUPPLIER NOTES

(from page 165)

Cotton Mills, Clinton, S. C., for 44 new Model C spinning frames (12,572 spindles) and modernization of 284 frames (72,000 spindles).

Next year 83 colleges and universities will benefit from the aid-to-education program established by **American Viscose Corp.**, designed to encourage the study of science and engineering.

Charles L. Fitts has been appointed representative of the **National Ring Traveler Co.** for the Virginia and eastern North Carolina territory.

The Louis Allis Co., has announced the construction of a new research and development center in Greendale, Wis. The building, which will be staffed with 100 engineers and technicians, will double the size of the present engineering and physics laboratories.

Albert Laughey has been named general sales manager of the yarn division of **Collins & Aikman Corp.** Mr. Laughey came to Collins & Aikman from Massachusetts Mohair Plush Co.

Thomas D. Lewis, Jr., has been named assistant sales manager of the tire cord-industrial products division of **Industrial Rayon Corp.**

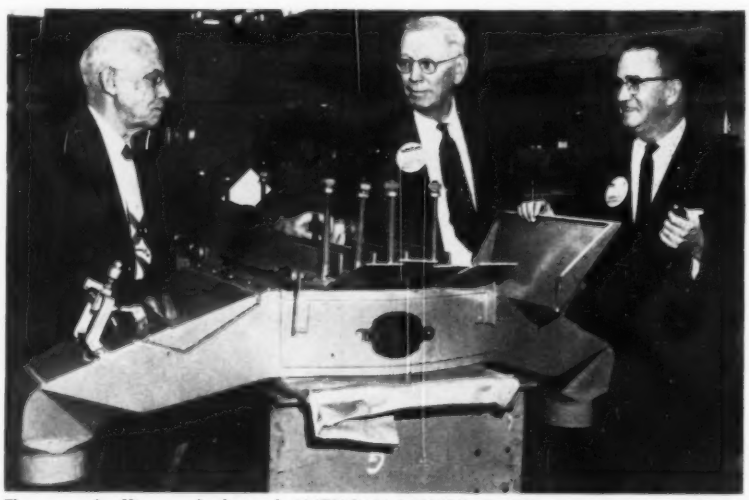
An applications, a product development, and a technical service section have been established in the reorganization of the development and service department of **Emery Industries, Inc.**

Fred P. Worden has been appointed sales manager of **Lester Laboratories, Inc.** Mr. Worden will direct the sales activities of the firm of research and manufacturing chemists for industry from the general offices in Atlanta, Ga.

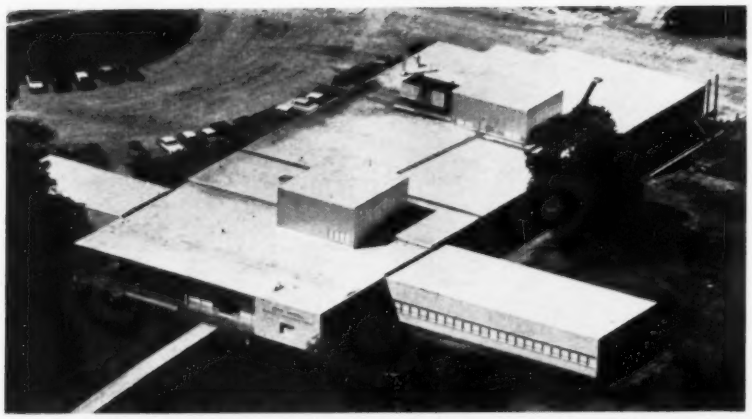
Brame Textile Machine Co., Greensboro, N. C. has acquired controlling interest in **Craig & Buchanan Loom Reed Co.** Redesignated **Precision Loom Reed Co., Inc.**, the firm is a subsidiary of the Brame organization.

Bertram Sternlieb, formerly stylist and production manager of Young Knitting Mills, has been appointed a technical service representative in the fibers division of **American Cyanamid Co.**

Fred A. Ingram has been promoted to field sales manager of the textile fibers department of **The Dow Chemical Co.** Mr. Ingram will be responsible for field sales of Zefran acrylic fiber, Lurex metallic yarn, and Rovana saran micro-tape in the Boston, Camden (N. J.), Charlotte (N. C.), and San Francisco offices. Mr. Ingram will continue to be headquartered in the Camden, N. J., office.



The general offices and plant of AMERICAN MONORAIL CO. are now on a 7½-acre site at 1111 E. 200th St., Euclid 17, Ohio, the move from the old location on Athens Ave. in Cleveland having recently been completed. In this photo two of the company's oldest employees discuss one of their newest products—a vacuum cleaner for spinning rooms—with C. L. Fell (right), vice-president of marketing, before the start of two open houses and special tours of the new facilities by community and industry groups. At left is R. L. Fotheringham of the engineering department, who is 74 years old. F. C. Harris (center), one of the founders of the firm, is also 74.



This new 40,000 sq ft building in Clemson, S. C., houses the textile machinery research and development activities of SACO-LOWELL SHOPS, an operation which was formerly carried on at Biddeford, Me. Designated the Saco-Lowell Research and Development Center, it was formally dedicated on November 7. Start of operations here completed the move of Saco-Lowell's textile machinery division entirely to the South in just one year from the initial announcement of the move.

Emre Bleier has been appointed a sales representative for the industrial division of **Nopco Chemical Co.** Covering metropolitan New York, New Jersey, Philadelphia, Wilmington (Del.), and parts of Pennsylvania, Mr. Bleier succeeds William J. Gavin, who has been made a regional sales manager.

Whitin Machine Works recently announced receipt of orders for machinery as follows: Avondale Mills—65 Even Draft drawing frames (260 deliveries) and eighteen 14" x 6½" Long Draft roving frames (1,728 spindles) for the Alexander City, Lafayette, Sycamore, and Sylacauga, Ala., plants; Candlewick Yarn Mills—24 Piedmont spinning frames (5,760 spindles), and six 14" x 6½" Long Draft roving frames (384 spindles) for the Dalton, Ga., division, and four American system Model M Monarch spinning frames (608 spindles) for the Royston, Ga., plant; Warren (S. C.) Division of Graniteville Co.—five Axifeed blenders and one Axi-Flo cleaner; Greenville (Miss.) Mills—3 Model E wool spinning frames (504 spindles); Inman (S. C.) Division of Inman Mills—four 12" x 6½" Long Draft roving frames (360 spindles); Jagger Brothers, Inc., Springvale, Me.—3 Piedmont KW spinning frames (720 spindles); Judson Mills, Greenville, S. C.—two Super Lap machines; Little Cotton Mfg. Co., Wadesboro, N. C.—two 14" x 6½" Long Draft roving frames (192 spindles); Bladenboro (N. C.) Cotton Mills, Inc.—five 12" x 6½" Long Draft roving frames (480 spindles); Harriet Cotton Mills, Henderson N. C.—six Even Draft drawing frames (48 deliveries); Cone Mills—twelve 12" x 6½" roving frames for Edna Plant at Reidsville and fifteen for the Revolution Mill in Greensboro. • • • Norman F. Garrett, general manager of the Whitinsville (Mass.) division has been elected a vice-president.

Smith Products, Inc., successor to Keller Machine Co., has completed the reorganization of personnel with the addition of William R. McCann as plant superintendent. In making the announcement, Roy M. Smith, Jr., president, said that he is concentrating his efforts on sales, over-all plant operations, and knitting machine rebuilding services, while administration is under the direction of John W. Sweeney.

Textile Aniline and Chemical Co. has been appointed a distributor for Monsanto Chemical Co.'s Sterox 21-K, a product used for the fulling and scouring of wool and wool blends, and Monsanto's complete line of surfactants.

Lucius Collins, formerly manager of the dyes and auxiliaries sales development section of the Dyes and Chemicals Division of **E. I. du Pont de Nemours & Co., Inc.,** has been appointed manager of the division's New York consulting service for the dyeing and finishing trade.

A New York combination sales and service center has been opened by **Hayssen Manufacturing Co.** Located at 44 Worth St. in Manhattan, the new facility also will serve as the

Why Fuss, Fret or Fiddle Around..

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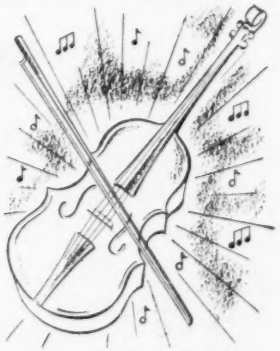

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SUPPLIER NOTES

(from page 167)

sales and service headquarters for the company's northeastern sales territory. Fraser Perry is in charge.

Construction of two additional buildings at the Alexander Research Laboratories, Plainfield, N. J., has been announced by **National Starch and Chemical Corp.** When the buildings are completed early next year, the research and technical development facilities will be increased by more than fifty per cent.

Clinton (S. C.) Cotton Mills and Lydia Cotton Mills, Clinton, S. C., have given orders to **Saco-Lowell Shops** for high compression calenders for pickers at both plants, 216 deliveries of Versa-Matic drawing, and 65 sets of double line Uniflex lifting rolls for installation on roving frames to accommodate 16" x 42" cans from the new drawing frames.

Carl A. Bergman has been appointed to the new position of chemical sales manager—southern region, **General Dyestuff Co.,** division of General Aniline & Film Corp. Mr. Bergman will direct and coordinate chemical sales in the Charlotte, N. C., and Chattanooga, Tenn., branches of the company.

Robert F. Morris, formerly associated with Allied Chemical Corp., has been appointed a sales representative for **Southern Dyestuff Co.**

SKF Industries, Inc., has purchased a 12-acre tract of land in Hawthorne, Calif. In making the announcement, E. R. Broden, president and chairman of the board stated, "We have acquired the site in order to anticipate any expansion requirements of our West Coast facilities."

Edward S. Rudnick, Representatives, has announced recent sales of equipment as follows: Long Shoals Cotton Mills, Lincolnton, N. C.—24 OM-S sliver-to-yarn spinning frames (8640 spindles) and 32 deliveries of O-M drawing with automatic can changers for installation in the recently acquired Massapoag plant in Lincolnton; Bear Brand Hosiery Co., Kankakee, Ill.—11 OM-S spinning frames; **Consolidated Print Works, Inc.,** Woonsocket, R. I.—one Ichinose automatic screen printing machine.

John G. Ferguson has been named to represent the **Putnam Chemical Corp.** in the Mid-Atlantic area with headquarters in the company's Philadelphia, Pa., office. Mr. Ferguson was formerly with Swan Finishing Corp.

Mr. Ferguson
Putnam

Mr. Cutting
Southern Machinery

Mr. Patelis
Lowell Industries

Mr. Young
Lowell Industries

A. E. Staley Manufacturing Co. has promoted Natt K. Hammer from field sales manager to industrial products sales manager.

Lowell Industries, Inc., has announced the appointment of two sales representatives, James R. Young and Anthony Patelis, Jr. Mr. Young will call on customers in the southern states and will be headquartered in Greenville, S. C. Mr. Patelis will cover the eastern states and as far west as Chicago from his headquarters in New York City.

The New England office and Pigment Division of **Carbic-Hoechst Corp.** has moved from Providence to 129 Quidnick St., West Warwick, R. I.

Southern Machinery Co., formerly Southern Loom Development Co., has announced that Arch E. Cutting has joined the staff as sales engineer.

To provide better service at all mill and grey goods sales levels and put more emphasis on merchandising activities, **American Cyanamid Co.** has realigned marketing responsibilities in the fiber division and established a market planning department, a sales department, and a merchandising department.

Morris Speizman Co., Inc., recently announced that L. P. Morin has been appointed agent for the Morris Speizman group of companies in Canada. Temporary offices have been set up at 1500 St. Catherine St., W., Suite 212, Montreal.

Clyde Fabrics, Inc., Newton, N. C., has ordered 87 frames of double-apron spinning changeovers from **Dixon Corp.**

Joseph E. Buonanno, Jr., has been appointed to the sales and technical staff of **Metro-Atlantic, Inc.,** with headquarters at the main office.

John W. Priesing has been named manager of the newly established West Coast sales branch of **Solvay Process Division,** Allied Chemical Corp. The branch is located at the firm's consolidated sales office, 235 Montgomery St., San Francisco, Calif.

The Chattanooga, Tenn., sales office of **Micro Switch,** a division of Minneapolis-Honeywell Regulator Co., has been moved to 1415 Howell Mill Rd., N.W., Atlanta, Ga. George U. Messner, who headed the Chattanooga office and serves on the Textile Sub-Committee of the AIEE, is in charge of the Atlanta office. Harry Brown has been transferred from the Chattanooga office to the company's office at 212 Greystone Rd., Charlotte, N. C.

E. H. Ketner has been named to the newly created post of latex trade sales manager for the **Firestone Synthetic Rubber and Latex Co.,** a division of Firestone Tire and Rubber Co. Donald S. Phillips has been appointed sales representative for the southeastern states.

The machines, tools, fixtures, patterns, and inventories of **John W. Hepworth & Co., Inc.,** Philadelphia, Pa., have been transferred to the Laconia, N. H., plant of **Scott & Williams, Inc.** The manufacture of Hepworth loopers, as well as spare parts will be continued and former customers of Hepworth will be serviced by Scott and Williams.

Milford E. Reiner has been appointed treasurer of the **Buffalo Forge Co.** and George P. Schivley, director of manufacturing, has been elected to the board of directors.

Willcox and Gibbs Sewing Machine Co. has appointed Robert S. Conklin as technical sales representative for the Buffalo-Rochester area. Mr. Conklin succeeds Peter Campbell who has been named district manager of the St. Louis territory. * * * Loren Morse has been named technical sales representative for western Pennsylvania.

Mr. Morin
Morris Speizman

Mr. Fine
Std. Mill Supply

Mr. Phillips
Firestone

Mr. Messner
Micro Switch

Frederic A. Soderberg, vice-president of F. C. Huyck & Sons, has been appointed general manager of the **Huyck Felt Co.** division.

International Salt Co. has moved into their new headquarters building in Clarks Summit, Pa.

Extensive additions to office and engineering facilities have been completed at the Westfield, Mass., plant of **Foster Machine Co.**

Carbert Mfg. Co., division of Pneumatic Scale Corp., Ltd., has announced the appointment of **Packaging Equipment Co.,** 3240 Peachtree Rd., N. E., Atlanta, Ga., as agents for the Model 1010 polyethylene bag sealing machine for the southeastern area. Pete Wilson is president of the firm and Tom Drake is assistant to Mr. Wilson.

Fabric Research Laboratories, Inc., has announced four additions to the staff as follows: Dr. Donald H. Powers, Jr., and John M. Facq as senior research associates; and Mrs. Chunghi Park and Miss Wilma Farrell as research assistants.

An expanded textile department to encompass all products sold to the textile industry has been announced by **Morningstar-Paisley, Inc.** Lee Kritzer, with headquarters in Charlotte, N. C., has been appointed manager of the new department. Sales and service offices will be established at New York City, Charlotte, N. C., and in a New England city to be decided on later.

The **Thomas Leyland Machine Co.** of Readville, Mass., has merged with **James Hunter, Inc.,** of Mauldin, S. C. The consolidation will place the modern manufacturing facilities of the new plant at the disposal of Leyland customers. Manufacture of the entire line of Leyland expanders and Flexspools will be continued.

Celanese Corp. of America has leased from Morgan Guaranty Trust Co. of New York eight entire floors in the bank's 23-story building now under construction. The executive offices will be moved into the new quarters about the middle of next year.

Joseph Bowler, Jr., formerly a sales engineer for Terrell Machine Co., has joined the sales department of **Leesona Corporation** and has been assigned to the southern district with headquarters in the Charlotte, N. C. offices. * * * The firm has received an order from the Amerotron Co. for 3,200 Unifil Loom Winders.

Joseph A. Okey, formerly associated with Graham Chemical Co., has been appointed a southern representative for **Eastern Color & Chemical Co.** Mr. Okey will service North and South Carolina and parts of Virginia from his headquarters in Graham, N. C.

Charles E. Hollis, who was formerly with American & Efird Mills, has joined the machinery equipment department of the **Uster Corp.** as a sales engineer specializing in the Ustermatic warp tying machine.

Dr. Frank C. Campins, president of **Polymer Industries, Inc.,** was awarded the Packaging Institute's 1959 Professional Award at the annual awards dinner held in New York recently.

James J. Fine has joined the sales department of **Standard Mill Supply Co.**

Mr. Bowler
Leesona

Mr. Hollis
Uster Corp.

Polymer PRODUCTS

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Dacron Size (Polyfilm SD)
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Prepared Type (Polyprint SM 500)
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Anions (Polysoftener 75, 346 1525, 1610)
Non-ionic (Polysoftener 100)
Sewing Lubricant A554

PLASTICIZERS
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Polylube P (Polyethylene Emulsion, Anionic)
Polylube EE (Polyethylene Emulsion, Non-ionic)

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